Illinois Department of Revenue
Brian Hamer, Director

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Instructions for Industrial Schedules

The information in this publication is current as of the date of the publication. Please visit our web site at **tax.illinois.gov** to verify you have the most current revision.

The contents of this publication are informational only and do not take the place of statutes, rules, or court decisions. For many topics covered in this publication, we have provided a reference to the Illinois Property Tax Code for further clarification or more detail. All of the sections and parts referenced can be found at 35 ILCS 200/1 et seq.

Contents

About this publication

Pub-127, Instructions for Industrial Schedules, is issued according to Section 8-5 of the Property Tax Code which states, “The Department shall confer with, advise, and assist local assessment officers relative to the performance of their duties.”

This publication includes schedules for industrial buildings by square foot (SF) cost, pre-engineered steel building shells, component-in-place (CIP) method, and grain elevators. The pricing schedules here have been developed to help assessors estimate the replacement cost of typical industrial structures. The assessor’s professional judgement still greatly affects the outcome of this system.

Acronyms used in this publication

BPA	Base price adjustment
CIP	Component-in-place
LB	Load bearing
RCN	Replacement cost new
REL	Remaining economic life
SF	Square foot
SFFA	Square foot of floor area
SFGA	Square foot ground area
SFSA	Square foot surface area
WH	Wall height

Note: For definitions of common construction terms used in this publication, see Publication 124, Construction Terminology.

Industrial Square Foot Schedule Instructions

The industrial square foot schedule was designed from the component-in-place (CIP) schedules. This was accomplished by constructing hypothetical model buildings of a variety of wall types combined with a variety of structural frames. All of the model buildings were 150’ x 300’ with a 16’ wall height on the first story and 12’ wall heights on upper stories. The roof design was flat. In structural framed buildings, the frame bay sizes did not exceed 1,200 SF.

The components included with all buildings at the same cost rate were

- site preparation and excavation
- concrete grade slab floor construction
- average interior construction
- footings and foundations
- exterior doors
- heating
- lighting and electrical
- minimal floor finish
- roof drains
- roughed-in plumbing service but no fixtures

To the above constant cost, several combinations of exterior wall construction, structural frame types, and roof structures were added. The square foot costs for each variation were analyzed to derive a typical square foot cost for buildings with either of three basic types of wall construction or one of five types of framing.

A single square foot price for a subject building is extracted from the schedule by correlating the story (1st, 2nd, or upper) and the framing type (load-bearing, load-bearing interior supports, wood post and beam, ordinary steel columns and beams, fireproof steel columns and beams, or concrete columns and beams), with the exterior wall treatment (brick or stone, block or concrete panel, steel panel, or comparable).

Note: Adjustments to the base price may be necessary for building shape, size, wall height, and construction weight. Additions and deductions for size, wall height, and construction weight variations are included at the bottom of the base price schedule. Other additions (plumbing fixtures, air conditioning, sprinkler systems, office enclosures, mezzanines, power wiring, extensive partitioning, basement construction, docks, and yard and outside improvements, *etc.*) to the base price may be necessary. Some of these items can be priced from the subsidiary schedules that follow the base price schedules. It may be necessary to refer to the CIP schedules in this publication to price other items.

Primary base price adjustments

1 Wall height variation — The amount of this adjustment is 1 percent per foot of wall height variation. The schedule includes a standard wall height of 16' for the 1st story and 12' for the upper stories. If a subject building's wall varies from these dimensions, make an adjustment to the initial floor base price for each story of the building and then write the amount on the PRC.

Example: 18' brick walls, ordinary steel framing

$	46.60	1st floor base price
x	1.02	2% increase for 2' wall height variation
$	47.53	adj. 1st floor base price

The following steps will be chain-multiplied to arrive at a base price adjustment factor.

2 Adjustment for size — It usually costs less (per unit) to build a larger area than a smaller one. Since the base price schedule is from a model building of 45,000 square feet and includes various components at a constant cost rate, it is sometimes necessary to adjust the base cost to account for building size. Various sizes and appropriate adjustment factors are shown on the base price adjustments table in the industrial cost schedules.

Example: Refer to the size adjustment table and find the range 65,001 - 80,000 SFGA. A building with 75,000 SFGA has a size adjustment factor of 0.90.

3 Shape adjustment — Make an adjustment for shape to account for area or perimeter ratio variations. It costs less to build a square box than a rectangular box of the same area and volume because the rectangular box will have a larger wall area. The building shape table is provided to adjust the base price for these variations for wall to floor area ratio. The process for shape adjustment follows.

a Multiply the length by the width of the subject property to determine the building's SFGA.

b Add the length of the building's exterior walls to calculate the perimeter of the subject building. To calculate an effective perimeter for party walls, an adjustment of 60 percent is necessary for the length of any party wall (common wall between two buildings).

c Divide the SFGA by the effective perimeter to find the wall ratio.

d Select the corresponding shape adjustment factor from the Industrial building shape adjustment table.

Example: Refer to the Industrial shape adjustment table and use wall ratio of 40 to find a shape adjustment factor of 1.03.

4 Construction weight adjustment — In framed buildings, frame bays (rectangular or square) are formed by the columns. The frame bays are usually of consistent size throughout the building. The larger the frame bay sizes, the heavier the construction, which results in greater expense. An adjustment for construction weight is given in the base price adjustments table. Select the appropriate factor using either the load-bearing construction or the structural frame with bays.

Example: For a steel-frame with structural frame bays, multiply the length (40') by the width (25') to find the square foot of bay area (1,000 SF). Refer to the base price adjustments schedule and select the structural frame with bays of 401 to 1,200 SF for a construction weight factor of 1.00.

Note: When multiple adjustments are necessary, adjust any variation in height before you write the floor price in the computation ladder (Step 1). Then, add each adjusted floor price to obtain a base price per SFGA for the entire building. Next, adjust the base price for size, shape, and construction weight by applying a base price adjustment (BPA) factor (Steps 2 through 4). Make this adjustment in the computation ladder space designated as BPA. An example of a multiple adjustment is shown below.

Example

Step 1

$	46.60	1st floor base price
x	1.02	height adj. factor
$	47.53	1st floor adjusted price

Step 2 - Step 4

	0.90	size adjustment
x	1.03	shape adjustment
x	1.00	construction weight adj.
	0.93	BPA factor

Step 5

$	47.53	1st floor adjusted base price
x	0.93	BPA factor
$	44.20	adjusted base price

Industrial Square Foot Schedules

The cost figures shown are for one-story and multi-story industrial buildings. First story wall height is 16 ft. to eaves. Upper story wall height is 12 ft. In each cost category the price includes excavation, footings & foundation, floor construction and finish, framing, roof structure and cover, exterior wall construction, heating, electrical and lighting, average interior walls, doors, roof drains, and rough plumbing service.

Add for all other features such as plumbing fixtures, sprinklers, air conditioning, excessive interior walls, enclosures, *etc.*, from subsidiary schedules or from CIP schedules.

Adjustments for wall height, size, building shape, and construction weight are applicable to base prices selected from this schedule. Also a quality grade assignment and factor is necessary and applicable to the total cost estimate derived from the use of this schedule.

The base price is derived by correlating the framing type and story with the visible exterior wall treatment.

Industrial buildings (cost per SF)

Story	Wall height	Framing	Exterior wall cover: Brick, stone or equal	Exterior wall cover: Block, concrete panel or equal	Exterior wall cover: Steel panel or equal
First story	16’	Load bearing	$ 43.05	$ 41.50	—
		L/B interior supports	42.30	40.75	—
		Wood post & beam	42.75	41.20	$ 37.25
		Ord. steel cols. & beams	46.60	45.05	41.10
		F/P steel cols. & beams	58.40	56.85	52.90
		Concrete cols. & beams	57.50	55.95	52.00
Second story	12’	Load bearing	33.00	31.90	—
		L/B interior supports	33.00	31.90	—
		Wood post & beam	29.80	28.65	25.65
		Ord. steel cols. & beams	36.90	35.75	32.75
		F/P steel cols. & beams	47.40	46.25	43.25
		Concrete cols. & beams	42.70	41.60	38.60
Upper stories	12’	Stories 3 & 4	Use 105% of second story price		
		Stories 5 & 6	Use 110% of second story price		
		Over 6 stories	Estimate building cost from CIP schedules		

Base price adjustments

Story height	For story height variation, add or deduct per each foot	1%
Size	For buildings less than 20,000 SFGA, factor base price	1.10
	For buildings 20,001 to 35,000 SFGA, factor base price	1.05
	For buildings 35,001 to 55,000 SFGA, factor base price	1.00
	For buildings 55,001 to 65,000 SFGA, factor base price	0.95
	For buildings 65,001 to 80,000 SFGA, factor base price	0.90
	For buildings 80,001 to 100,000 SFGA, factor base prices	0.85
	For buildings over 100,000 SFGA, estimate building cost from CIP schedules.	
Construction weight	Load bearing construction, factor base price	1.00
	L/B with interior supports, factor base price	1.00
	Structural frame with bays under 400 SF, factor base price	0.98
	Structural frame with bays of 401 to 1,200 SF, factor base price	1.00
	Structural frame with bays of 1,201 to 2,000 SF, factor base price	1.02
	Structural frame with bays over 2,000 SF, factor base price	1.04

Industrial building shape adjustment table

Wall Ratio = Cubic feet ÷ SFWA

Wall ratio	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**
Adjustment factor	1.31	1.28	1.26	1.23	1.21	1.20	1.18	1.17	1.15	1.14	1.13
Wall ratio	**26**	**27**	**28**	**29**	**30**	**32**	**34**	**36**	**38**	**40**	**45**
Adjustment factor	1.12	1.11	1.10	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.01
Wall ratio	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**
Adjustment factor	1.00	0.99	0.98	0.97	0.96	0.96	0.95	0.95	0.94	0.94	0.93

Industrial Subsidiary Schedules

Fire escapes

Counterbalanced	
Two story building	$ 5,300
Each additional flight	3,000
Balcony and stairs	
Steel balcony - 2' wide (per LF)	$ 185
3' wide (per LF)	370
Steel stairs - 3' wide (per flight)	4,755
Ladders	**Per VLF**
Steel, bolted to building	
w/cage	$ 140
w/o cage	70
Aluminum, bolted to building	
w/cage	170
w/o cage	100

Fire sprinkler system

Sprinkler costs include all interior heads, supply lines, and accessories. Wet system piping contains water at all times; dry pipe system contains air under pressure and is used in those unheated areas where freezing might be encountered. For dry pipe systems, add 10% to the wet system prices.

Exterior pipe, alarm systems, and fire pumps should be added to the costs below.

Area serviced	Cost per SFSA	
	Ordinary hazard*	Extra hazard**
Through 1,000 SF	$ 5.00	$ 6.70
1,001 - 2,000	5.55	6.65
2,001 - 5,000	3.45	5.15
5,001 - 10,000	3.20	4.95
over 10,000	3.10	5.00

*Ordinary hazard occupancies include stores, commercial, offices, garages, factories, warehouses, *etc.*

**Extra hazard occupancies include aircraft hangers, chemical works, linoleum manufacturing, paint shops and varnish works, solvent extracting, *etc.*

Quality

	+50	338%	C		100%
	+25	281%		-5	95%
	+10	248%		±10	90%
AA		225%		+5	86%
	+40	210%	D		82%
	+30	195%		-5	78%
	+20	180%		-10	74%
	+10	165%		-20	66%
	+5	158%		-30	57%
A		150%	E		50%
	-5	143%		-10	45%
	±10	135%		-20	40%
	+5	128%		-30	35%
B		122%		-40	30%
	-5	116%		-50	25%
	±10	110%			
	+5	105%			

Retaining walls

Prices are for exposed face area and includes concrete footing 3' below grade.

Type		Per LF
Concrete block	6' high	$ 127.05
	8'	193.30
	10'	222.75
Reinforced concrete	6' high	211.20
	8'	255.30
	10'	299.40

Doors (industrial)

Type	Per SFDA
Steel roll-up	$ 19.70
Fiberglass overhead	21.30
Wood panel overhead	16.55
Steel	
rolling	20.65
overhead	13.55
vertical lift electric	106.70
Add for electric operation	
roll-up door	8.60
overhead	7.95
rolling	9.20
Walk-in	**Per SFDA**
Metal clad	
ind. swinging single leaf	$ 69.95
ind. swinging double leaf	66.60
office swinging single leaf	35.10
Fire doors	**Per SFDA**
rolling	$ 44.50
swinging	49.10
Add for electric operation, each	1,795.00

Office enclosures (per SF)

Approximate office size	Finish quality			
	Econ.	Avg.	Good	Excl.
Up to 2,500 SF				
Wood frame partitions	$ 19.25	$ 24.85	$ 32.10	$ 41.45
Masonry partitions	21.05	27.05	34.70	44.55
Over 2,500 SF	Build from CIP schedules			

Note: Most partitions and enclosures will fall into the good or avg. categories. Partitions or enclosures with extravagant, exclusive and/or super-adequate characteristics should be considered excl. Partitions and enclosures with limited amenities and sub-standard basic structures should be classified as econ.

Industrial Subsidiary Schedules

Plumbing

The typical fixture cost is for sinks, water closets, tubs, water heaters, urinals, *etc.* The cost includes amounts for the fixture, water supply, waste, and vent lines. Exterior piping to the building is not included.

Typical fixtures

Residential Type 1	Commercial Type 2	Industrial Type 3	Specialty Type 4
$1,465	$3,590	$3,835	see below

Specialty fixtures

	Each
Drinking fountain	
floor	$ 2,240
wall	1,605
Electric water cooler	1,760
Laundry tub	
single	1,255
double	1,215
Sump pump	520
Janitor's sink	2,185
Emergency shower or face wash	1,300

Cast iron trough sinks		
4 faucet	48"	$ 2,065.00
8 faucet	96"	3,475.00
Add for stainless steel		20%

	36"	54"
Circular wash sinks		
polished cement	$ 3,030	$3475
terrazzo	3,140	3,605
enameled steel	3,475	3,875
stainless steel	3,735	4,295

	36"	54"
Semi-circular wash sinks		
polished cement	$2,660	$3,045
terrazzo	2,790	3,235
enameled steel	3,095	3,525
stainless steel	3,430	3,875

	Enameled steel	Stainless steel
Column showers		
circular (per shower head)	$ 495	$ 685
semi-circular (per shower head)	650	895

Single stall shower	
w/receptor & curtain hanger	$ 835.00
w/receptor & hinged door	1,180.00
Open showers up to 12 spray	
minimum	$ 1,860.00
maximum	2,725.00

Note: Above prices do not include partitions.

Mezzanines (cost per SFFA)

Mezzanine costs include the framing support system, the floor system, stairways, and lighting. Where applicable typical partitioning, floor, wall, and ceiling finishes are also included. A height adjustment is not applicable to the mezzanine cost. Mezzanines created by a structural floor over interior partitions should be priced by using appropriate CIP schedules for each construction and/or finish component.

Mezzanine finish	Construction	
	Steel framed	Concrete framed
Unfinished	$ 17.75	$ 23.15
Store, display (finished open)	29.55	41.70
storage	17.55	23.15
Office (finished divided)	39.60	56.60

For wood framed mezzanines use 65% of the steel costs.

Basement walls (including footings)

Wall const.	Thickness	Height	Per LF
Reinforced concrete	8"	8'	$ 176.95
		9'	194.75
		10'	212.50
		12'	253.85
	12"	8'	204.50
		9'	224.40
		10'	244.35
		12'	289.90
		16'	379.65
Concrete block	8"	8'	124.95
		9'	136.30
		10'	147.65
		12'	170.35
	12"	8'	159.30
		9'	173.65
		10'	187.95
		12'	217.40
		14'	245.70
		18'	302.70
Brick (solid)	8"	8'	236.20
		9'	261.45
		10'	286.75
		12'	337.25
	12"	8'	263.85
		9'	291.25
		10'	318.65
		12'	347.20
		14'	428.65
	16"	8'	403.80
		9'	448.60
		10'	493.40
		12'	583.00
		14'	672.25

Industrial REL Table Instructions

The REL table is designed to be a guide to determine the loss in value due to physical, functional, and economic depreciation. The REL factor is dependent upon your judgement of condition, desirability, and utility of the subject's improvements.

Remember that

- the table is used only when local supportive data is nonexistent. It cannot substitute for actual market data.
- age is a relative thing. A building with an actual age of 15 years may have an effective age of 3 years or 25 years based on physical condition alone. Considering desirability or utility can further reduce or increase the effective age estimate.
- actual age and effective age are the same when physical condition of the improvement is average.

The schedule attempts to relate loss in value due to condition, desirability, and utility (CDU). CDU represents depreciation as

Condition (C) = physical deterioration

Desirability (D) = economic obsolescence

Utility (U) = functional obsolescence

To use the Industrial REL table, segregate these basic depreciation components into two categories for consideration

- **Condition (C) = age considering physical condition**
- **Desirability and Utility (D and U) = effective age**

Analyze the two categories, then estimate the effective age that is correlated to an REL factor. This process uses the age/life method of depreciation with an assumed economic life of 45 years.

Using the REL table

To consider the condition of the improvement, inspect the physical condition and compare it to similar improvements of the same age. By making this comparison, you can estimate the effective age according to the improvement's condition. Actual age and effective age are the same when physical condition of the improvement is average. Conditions that substantially differ from the average result in effective ages less than or greater than actual age. Locate this age (actual age considering condition) in the far left-hand column of Schedule A and then correlate it with the appropriate desirability and utility rating column.

When you consider desirability, focus on any loss of value due to economic obsolescence. Economic obsolescence is usually caused by factors outside of the property. Some typical areas to consider are general location, highway access, railroad access, market for manufactured products, labor markets, utility sources, community relations, police and fire protection, competition, financing, taxes, educational and recreational facilities.

When you consider utility, focus on loss of value caused by functional obsolescence. This obsolescence may be in the form of inadequacy or super-adequacy. For instance, an industrial building with a 20 foot ceiling height may suffer a loss of value due to functional obsolescence if the market reflects the need for 15' ceilings. The value loss is caused by over-adequacy.

When you consider a rating for utility, consider the following frame bay size, availability of rail siding, number of stories, dock facilities, expansion space, transportation access and egress, parking facilities, ceiling height, adequacy of building fixtures (*e.g.,* lighting, heating, ventilation, plumbing), existing utilities or availability, office area, traffic patterns, and building size.

Average desirability and utility requires that the improvement have the features that are typical for a mercantile business to operate in the building. Lack of economic or functional features results in a less than average rating (*i.e.,* poor or unsound). Additional features that contribute economically or functionally to the improvement result in an above-average rating (*i.e.,* excellent or good) for desirability or utility.

After you assign a desirability and utility rating, correlate the effective age from Schedule A in column one with the appropriate column (*e.g.,* average, good) to reach an effective age that reflects the improvement's CDU. Locate this final estimate of effective age in Schedule B and correlate it with an estimate of REL of the improvement.

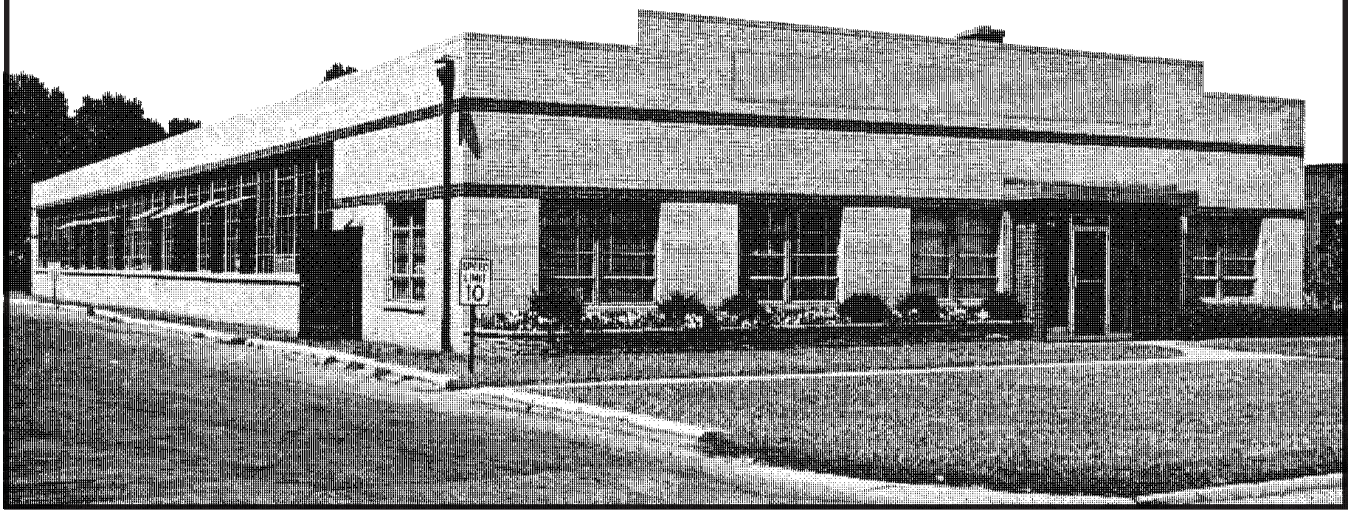
Industrial REL Table

Schedule A						Schedule B	
Age* considering physical condition	Effective age considering desirability and utility					REL	
	E	G	A	P	U	Eff. age	REL
1	1	1	1	5	9	1	97.5
2	1	1	2	6	10	2	95
3	1	1	3	7	11	3	92.5
4	1	1	4	8	12	4	90
5	1	1	5	9	13	5	87.5
6	1	2	6	10	14	6	85
7	1	3	7	11	15	7	82.5
8	1	4	8	12	16	8	80
9	1	5	9	13	17	9	77.5
10	2	6	10	14	18	10	75
11	3	7	11	15	19	11	72.5
12	4	8	12	16	20	12	70
13	5	9	13	17	21	13	67.5
14	6	10	14	18	22	14	65
15	7	11	15	19	23	15	62.5
16	8	12	16	20	24	16	60
17	9	13	17	21	25	17	57.5
18	10	14	18	22	26	18	55
19	11	15	19	23	27	19	52.5
20	12	16	20	24	28	20	50
21	13	17	21	25	29	21	47.5
22	14	18	22	26	30	22	45
23	15	19	23	27	31	23	42.5
24	16	20	24	28	32	24	40
25	17	21	25	29	33	25	37.5
26	18	22	26	30	34	26	35
27	19	23	27	31	35	27	32.5
28	20	24	28	32	36	28	30
29	21	25	29	33	37	29	27.5
30	22	26	30	34	38	30	25
31	23	27	31	35	39	31	22.5
32	24	28	32	36	40	32	20
33	25	29	33	37	—	33	17.5
34	26	30	34	38	—	34	15
35	27	31	35	39	—	35	12.5
36	28	32	36	40	—	36	10
37	29	33	37	—	—	37	10
38	30	34	38	—	—	38	10
39	31	35	39	—	—	39	10
40	32	36	40	—	—	over 40	10
41	33	37	—	—	—		
42	34	38	—	—	—		
43	35	39	—	—	—		
44	36	40	—	—	—		
45	37	—	—	—	—		

*Actual age and effective age are the same when physical condition of improvement is average.

Sample Appraisal — Industrial Building

Factory and office — grade C
One-story block and brick building



Foundation — concrete spread footings, masonry wall foundation

Frame — load-bearing

Walls — 16” block and brick, 448 LF

Floors — 6” concrete

Roof — Flat with steel bar joist, steel decking, and built-up composition roofing

Mechanical features

Electrical — Fluorescent fixtures; rigid conduit wiring

Plumbing — 5 water closets,3 lavatories, 1 urinal, and 1 water heater

Heat — Suspended space heaters

Other features

18’ x 62’ wood office enclosure with good quality finish

A sample PRC is on the following page.

Industrial Building

Property Record — Commercial — Industrial

PUB-127 (N-08/06)

Construction Specifications

Foundation			
Sprd. Ftg.	✓	Pile	
Caisson		Other	

Wall Framing	B	1	2	3	A
Wood					
Steel O/FP					
Reinf. Concrete					
Load Bearing		✓			

Frame Bay - Bay Area **N/A**

Floors				
Wood				
Steel O/FP				
Reinf. Concrete	✓			
Frame	Wood	Steel	Conc.	

Exterior Walls	
Siding	
Masonry Blk./Brk.	✓
Steel	
Glass	

Finish	
Unfinished	✓
Finished Open	
Finished Divd.	✓

Heat	
Cent. Wm. Air	
Ht. Wt/Steam	
Unit Heaters	✓
None	

Air Conditioning	
Central	
Unit	
None	✓

Roofing				
Composition	✓	Shingle		
Slate		Metal		
Frame	Wood	(Steel)	Conc.	

Plumbing Type			
1		2	
3	**10 fixtures**	4	
	Sprinkler		

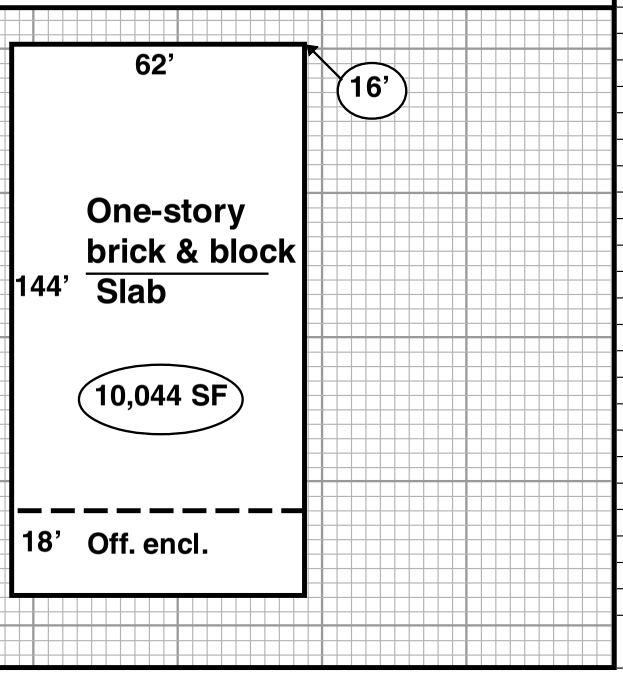
Use					
Store		Office		Vacant	
Apt.		WH		Abandoned	
Factory	✓				

No. of Units	
Avg. Unit Size	
No. Rooms Per Unit	

Prorated @ _____%
with:

Data Bank	
SF Ground Area	10,044
Eff. Perim LF	448
CF of Bldg.	160,704
SF Wall Area	7,168
Wall Ratio	22.42

1 Sty **Brk & blk** Sched. **Ind. SF**



Description		Computation
Flr. Price x Ht. Adj.	WH	
	Bsmt.	
43.05 x 1.00	16' 1st Floor	43.05
	2nd Floor	
	3rd Floor	
	Base Price	43.05
Size 1.10 x Shape 1.17 x Weight 1.00	BPA	x 1.29
	Adj. Base Price	55.53
	Heat	
	A/C	
	Electrical Light	
	Sprinkler	
	SF Price	55.53
	SF	10,044
	Subtotal	557,743
10 fixtures @ $3,835.00	Plumbing	38,350
18' x 62' good grade @ $32.10	Office encl.	35,824
	Partitions	
	Front	
	Canopy	
	Dock	
S C M I Grade C	Total	631,917
C&D 1.00 G 1.00 NH 1.00	A 1.00 = FAC 1.00	
Eff. Age 28 / Eff. Age 28 / CDU Avg./Avg. / Age 28	Replacement Cost New	631,917
Depreciation = 70%	REL	0.30
	Full Value	189,575

Summary of Other Buildings

Type	No.	Construction	Size	Rate	Grade	Age	CDU	Factor	Repl. Cost New	REL	Full Value

Listed by: **JRT**
Date: **1/06**

Total full value other buildings
Total full value all buildings **189,575**

Pre-engineered Steel Building Shell

Schedule explanation

The minimal economic size of pre-engineered steel buildings is 3,000 SF and a typical eave height is 18-20 feet. In recent years, the use of these buildings has expanded from industrial/warehouse to include a wide variety of uses including mercantile and office. Because of this, the basic schedule is designed to price building shells only. Other construction features are to be priced separately from the CIP schedules. The term "building shell" (as used here) refers to the steel frame, including girts and purlins, a roof deck, and exterior wall skin of 26 gauge colored steel. A list of other items that may need pricing includes excavation, knee walls, fill and compaction, footings, foundation, floor interior construction, electrical and lighting, heating and cooling, plumbing, yard and outside improvements, *etc.* Some of these items may be priced from the subsidiary schedules that follow the base price schedules.

In cases where a subject building does not have the wall and/or roof cover described above, a deduction of $4.40 per SF of wall and/or roof area is made, then the existing wall and/or roof is priced using the appropriate CIP schedule.

Pre-engineered Steel Building Shell

Building type	Typical building widths	Eave height				
		10'	14'	16'	20'	24'
Rigid frame	30 — 40	$ 7.00	$ 7.50	$ 7.90	$ 8.55	$ 9.20
	50 — 100	7.05	7.05	7.60	7.90	8.55
	110	—	7.50	7.60	7.60	8.35
	120	—	7.70	7.90	7.60	8.55
	130	—	7.85	8.25	7.90	8.65
Tapered beam	30	7.35	8.00	8.60	8.90	—
	40	6.95	7.30	7.70	8.30	—
	50 — 80	6.85	7.00	7.30	7.70	—
Column & beam 1 post at center point	80	—	6.35	6.80	7.05	7.60
	100	—	6.25	6.45	7.00	7.50
	120	—	6.05	6.30	6.55	7.15
Column & beam 2 posts at 1/3 points	120	—	5.90	6.15	6.55	7.15
	150	—	6.25	6.45	6.70	7.50
	180	—	6.60	6.60	7.00	7.60
Column & beam 3 posts at 1/4 points	160	—	5.85	6.30	6.70	7.15
	200	—	6.25	6.45	6.90	7.30
	240	—	6.60	6.70	7.00	7.60

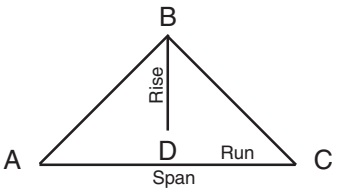
For insulated exterior wall cover, add $1.65/SFWA

For buildings with roof pitch of 4:12 or over add 6%

For buildings of less than 5,000 SF, add 5%

For buildings of over 20,000 SF, deduct 10%

How to calculate roof pitches



Roof pitch is computed from the ratio of the rise to the run and is described as a 4 in 12 pitch, a 5 in 12 pitch, etc. In this cross section, the steepness of distances AB and BC constitutes pitch. Distance (AC) extending from one eave to the other is the span. One-half this distance (AD or DC) is called the run. Distance (BD or DB) is called the rise. The first step is to determine the length of the run and the rise.

Example: known — 50' span (AC) with 12' rise (BD)

1 Convert rise to inches — 12' x 12" per foot = 144".

2 Divide inches of rise (144") by run in feet (25') — 144" ÷ 25' = 5.76 rise, or 6 in 12 pitch.

Pre-engineered Steel Building Shell

Earthwork

Demolition (per CF of building)	$0.30
Site preparation (per SFGA)	0.15
Excavation (per CF earth removed)	0.10
Fill, compacted (per CF of fill)	0.40

Foundation walls (including footings)

Concrete*

Rating	Supported area above foundation	Per LF
Light	Up to 2 stories	$ 106.65
Medium	3 — 6 stories	116.50
Heavy	7 — 10 stories	126.60
X-heavy	Institutional	145.50

Concrete block*

Medium	1 story	$ 64.50
Heavy	Over 1 story	94.05

Strip footings only

(12" deep — without foundation walls)

Width	Per LF
	Reinforced
24"	$ 34.80
32"	40.10
40"	45.35
48"	60.15

*Prices based on 4' wall height — includes asphalt damp proofing.

Office enclosures

Approximate office size	Finish quality (per SF)			
	Econ.	Avg.	Good	Excl.
Up to 2,500 SF				
Wood frame partitions	$ 19.25	$ 24.85	$ 32.10	$ 41.45
Masonry partitions	21.05	27.05	34.70	44.55
Over 2,500 SF	Build from CIP schedules			

Note: Most partitions and enclosures will fall into the good or avg. categories. Partitions or enclosures with extravagant, exclusive and/or super-adequate characteristics should be considered excl. Partitions and enclosures with limited amenities and sub-standard basic structures should be classified as econ.

Pre-fabricated shop offices

Pre-fabricated aluminum framed booths including doors, floors, lighting, HVAC, *etc.*

Approx. office size	Per SFFA
50 SF	$ 185
80 SF	150
100 SF	135

Heating — ventilation air conditioning (HVAC) (per SFFA)

Prices for HVAC are provided below according to finish or use of the building (or area within the building). The prices were developed on the basis of heating, ventilation, or air conditioning cubic area and then converted to SF costs for the convenience of the assessor. Because of this, it may be necessary to adjust the costs for height. The base height is 14' and 3% of the cost indicated should be added or deducted for each foot of height variation in your subject building.

Type	Comm.	Ind.	Ofc.
Electric baseboard	$3.05	$2.95	$4.50
Electric wall/floor heaters	1.35	1.35	1.80
Heat pump, heat and cool	6.55	7.00	9.25
Forced warm air, central system	3.15	3.15	4.95
Ventilation only w/ducts	0.95	1.00	1.40
Hot water baseboard	5.60	5.55	7.90
radiant floor	5.60	5.45	7.75
Steam radiators			
w/boiler	5.00	5.10	7.35
w/o boiler	4.05	4.25	6.25
Suspended unit heaters			
gas fired	1.65	1.70	1.90
w/steam or hot water coil	1.60	1.65	—
Zoned hot & cold water	13.55	13.85	18.65
Zoned hot & cold air	8.00	8.15	11.90
A/C central forced air	5.60	5.45	6.35
package floor units	3.75	3.80	4.50

Suspended unit heaters (cost each)

In those instances where a building has a very limited number of individual heating units, the above square foot cost might not be applicable. For a more reasonable cost estimate each individual heater should be priced separately. The costs are provided below and need not be adjusted for story height.

BTU rated capacity	Cost each	BTU rated capacity	Cost each
35,000	$ 1,215	150,000	$1,860
75,000	1,440	250,000	2,520
100,000	1,535	400,000	4,120

Electric heaters (cost each)

Infra-red ceiling or wall
1 kw: $370 2 kw: $490 3 kw: $625

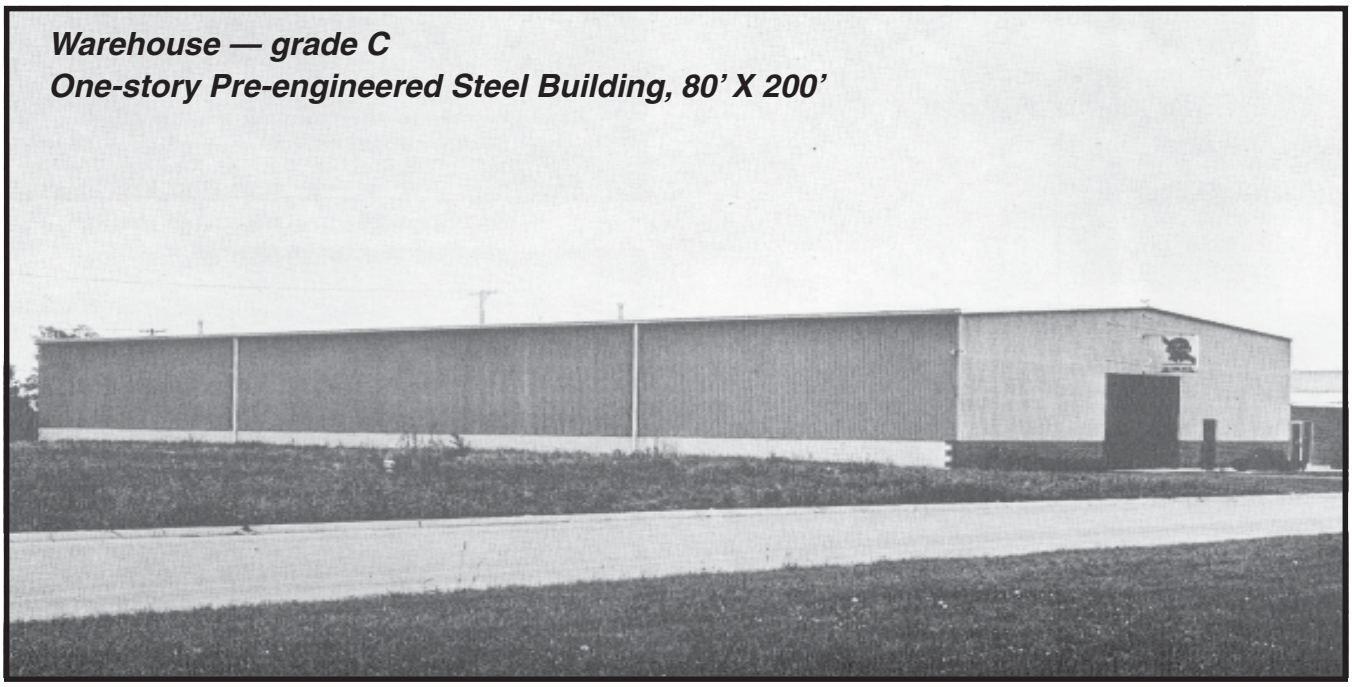
Infra-red modular baseboard or wall units
1 kw: $330 3 kw: $555 5 kw: $640

Ventilators

Roof power driven	Cost each	Roof gravity type	Cost each
12"	$ 575	12"	$ 315
18"	800	24"	585
24"	1,105	30"	715
30"	1,550	36"	855
36"	2,165	48"	1,105
42"	2,975		
48"	4,140		

For wall mounted power ventilators, deduct 10% from cost of roof power drive ventilators.

Sample Appraisal — Pre-engineered Building Shell



Foundation — concrete spread footings and concrete wall (light rating)

Frame — steel rigid frame (five 40' increments)

Walls — enameled corrugated steel, 16' height, on 8" x 4' height concrete knee wall, batt insulation has been added to the exterior wall

Floor — 6" concrete slab

Roof — corrugated enameled steel and insulation over purlins

Mechanical features

Electric — scant lighting and electrical in rigid conduit
Plumbing — Three type 3 plumbing fixtures
Heat — adequate number of gas-fired suspended space heaters

Other features

80' x 4" face brick trim
Two 12' x 14' steel panel overhead doors with electric operators;
Two 3' x 7' metal doors
350 SF office enclosure with C grade finish (wood-frame partitions)

A sample PRC is on the following page.

Building Record — Component-in-Place

General Construction Specifications

Foundation

Sprd. Ftg.	✓	Pile	
Caisson		Other	

Framing

	B	1	2	3	A
Wood					
Steel O/FP		rigid frame			
Reinf. Conc.					
Load Bearing					

Floors

Wood						
Steel O/FP						
Reinf. Conc.		✓				
Frame		Wood		Steel		Conc.

Walls

Wood						
Msy. Blk./Brk.						
Steel		✓				
Glass						
Concrete		✓				

Finish

Unfinished			✓			
Finished Open						
Finished Divd.						

Heat

Cent. Warm Air						
Hot Water/Steam						
Unit Heaters			✓			
None						

Air Conditioning

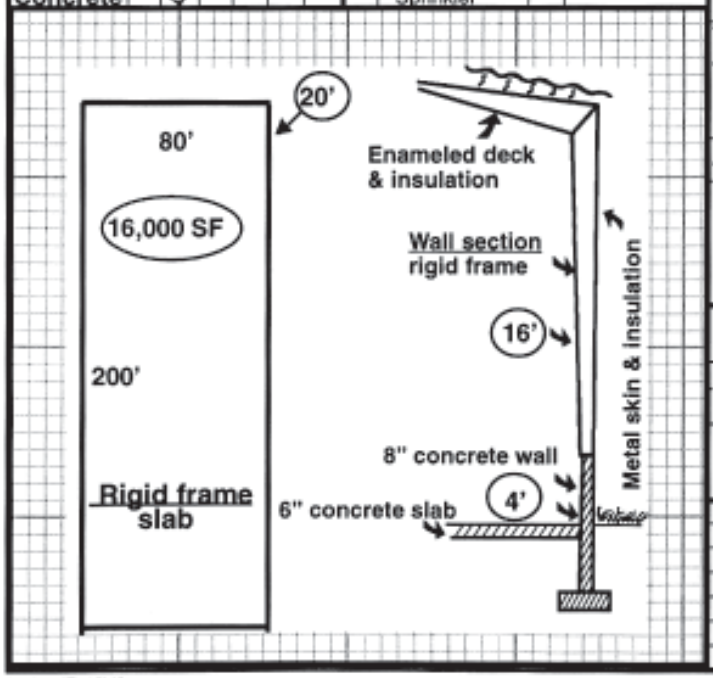
Central						
Unit						
None			✓			

Roofing

Composition				Shingle		
Slate				Metal		✓
Frame		Wood		Steel		Conc.

Plumbing Type

1		2	
3	3 fixtures	4	
	Sprinkler		



	Component	Field Description	Cost
primary components	site preparation	Earthwork 16,000 SF @ $0.15	$ 2,400
	excavation		
	footings	Spd. ftgs./10" conc. lt. rating to 2 stories 560 LF @ 106.65	59,724
	foundation		
	frame Bldg. shell	Rigid frame 16' 16,000@ $ 7.60	121,600
	roof structure		
	roof cover		
	exterior walls	8" Conc. (formed) 4' x 560' @ $20.10	45,024
	exterior walls		
	Doors (2)	12' x 14' Stl. OH $13.55 + $7.95 elec. op @ $21.50/SFDA	7,224
	Doors (2)	3' x 7' Metal single walk-in @ $69.95/SFDA	2,938
	floor constr.	6" Concrete slab 16,000 SF @ $3.85	61,600
	floor constr.		
	Brick trim	4' x 80' — 4" Face brick @ $12.35	3,952
interior construction			
	partition		
	partition		
	Ofc. encl.	350 SF Average grade finish @ $24.85	8,698
	wall finish		
	wall finish		
	Insulation	Roof — batts or roll 16,000 SF @ $1.20	19,200
	Insulation	Wall — batts or roll 16' x 560'@ $0.70	6,272
	ceilings		
	ceilings		
	floor finish		
	floor finish		
mechanical	electrical	Scant R/C ind. 16,000 SF @ $ 3.55	56,800
	plumbing 3	Type 3 fixtures @ $3,835 each	11,505
	heating	Susp. unit heaters 16,000 SF @ ($1.70 x 1.18*)	32,096
	ventilation	*Base height 14' (20' - 14' = 6' @ 3% = 1.18 bldg. height 20')	
	air condition		
	sprinkler system		
	dock		

Data Bank		Use	
SF Ground Area	16,000	Store	
Eff. Perim LF	560	Factory	
CF of Bldg.	320,000	Office	
SF Wall Area	11,200	WH	✓
Wall Ratio	(28.57)		
	29		

S C M I Grade C Total $439,033

C 1.00 D 1.00 G 1.00 NH 1.00 A 1.00 =FAC 1.00

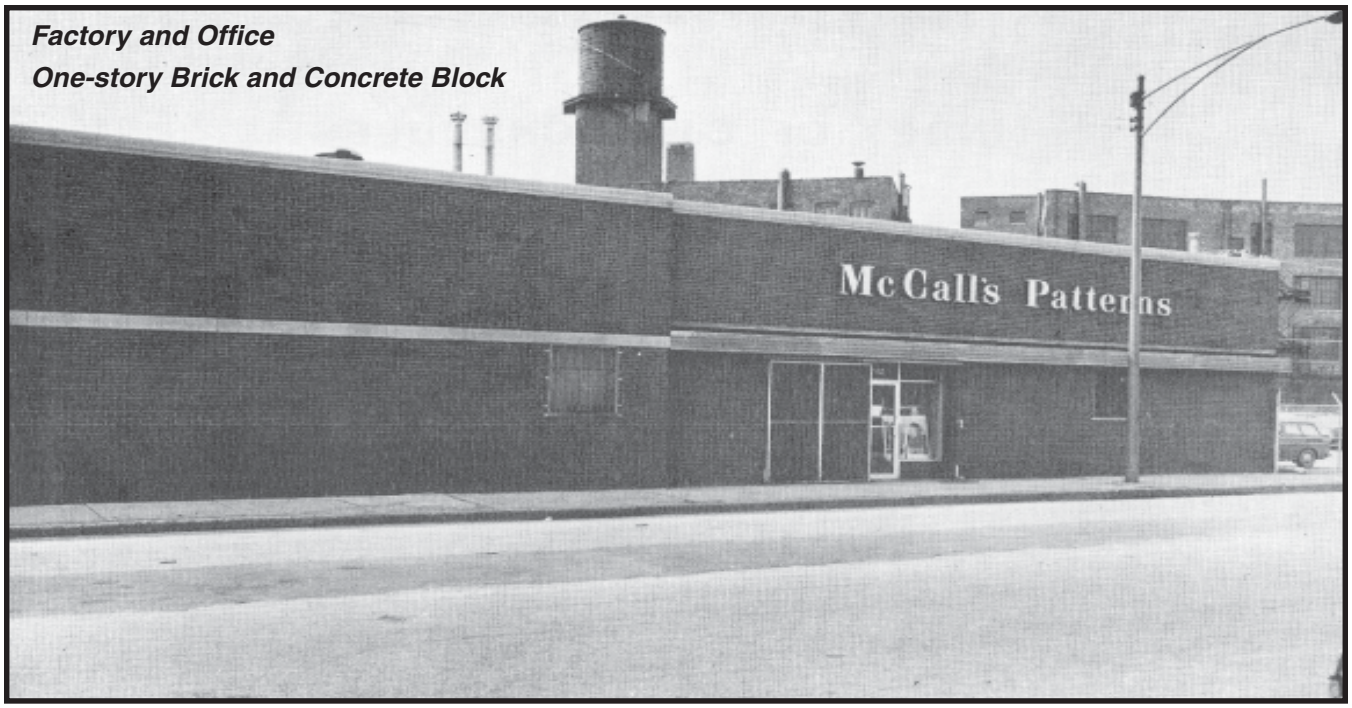
Eff. Age	Eff. Age	CDU	Age	Replacement Cost New
10	10	Avg/Avg	10	$439,003

Date: 1/06 BEL 0.75

Full Value $329,275

PRC-5 (R-1/00)

Sample Appraisal — Industrial Building



Foundation — concrete spread footings and 14" concrete wall

Framing — ordinary steel with bay sizes of 24' x 20'; column height of 16'

Wall construction — curtain wall, 12" concrete block back-up with 4" face brick

Floors — 6" concrete with 656 SF of nylon carpet with pad and 1,344 SF of vinyl asbestos tile

Roof — steel deck and frame with built-up composition cover and insulation

Partitions (office enclosure) — 1,200 SF, 8" block painted on two sides; 1,800 SF, 2" x 4" 16" on center steel stud with ½" drywall painted on two sides

Ceilings — 2,000 SF mineral fiber tile in metal suspension system

Mechanical

Electric — Fluorescent fixtures throughout; average service with wiring in rigid conduit
Heating — manufacturing area has suspended gas-fired unit heaters; office area has a zoned hot/cold air system
Plumbing — eight typical fixtures in industrial area and six typical fixtures in office area

Other features

2,000 SF unfinished concrete framed mezzanine
Two 8' x 12' steel overhead dock doors, each with electric operator
Two 3' x 7' steel walk-in doors
8' x 8' aluminum frame glass front with brick
One 3' x 7' aluminum-framed glass door

A sample PRC is on the following page.

Building Record — Component-in-Place

General Construction Specifications

Foundation			Finish	
Sprd. Ftg.	✓	Pile	Unfinished	✓ Plant
Caisson		Other	Finished Open	
			Finished Divd.	✓ Office

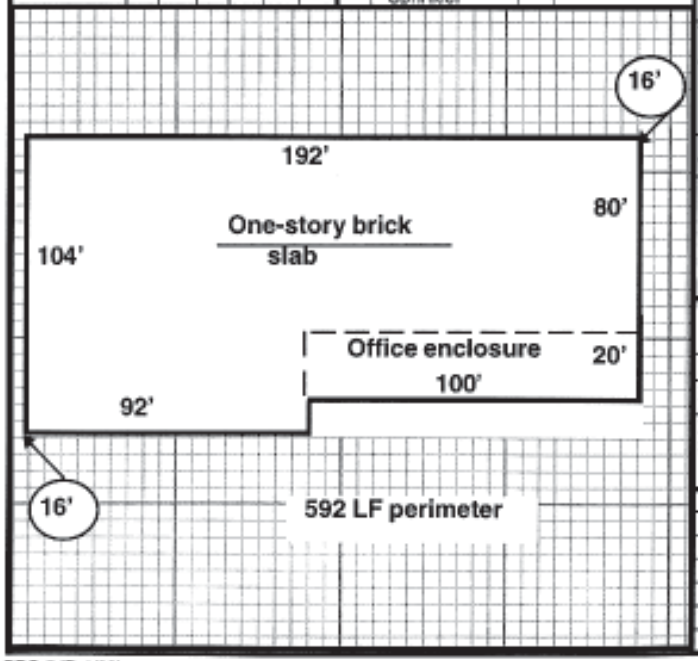
Framing	B	1	2	3	A
Wood					
Steel O/FP		✓			
Reinf. Conc.					
Load Bearing					

Frame bay 24' x 20'

Floors		Walls	
Wood		Wood	
Steel O/FP		Msy. Blk. Brk	✓
Reinf. Conc.	✓	Steel	
		Glass	
Frame	Wood Steel Conc.		

Heat			Air Conditioning	
Cent. Warm Air	✓	Office	Central	✓ Office
Hot Water/Steam			Unit	
Unit Heaters	✓	Plant	None	✓ Plant
None				

Roofing			Plumbing Type	
Composition	✓	Shingle	1	2 6 fixtures
Slate		Metal	3 8 fixtures	4
Frame	Wood	Steel Conc.	Sprinkler	



	Component	Field Description	Cost
primary components	site preparation	Earthwork 19,568 SF @ $0.15	$ 2,935
	excavation		
	footings	Spread ftgs./14" concrete lt. rating to 2 stories 592 LF @ $106.65	63,137
	foundation		
	frame	Ordinary steel. 19,568 SF @ $5.95 x 1.10 (height adj. @ 5%/ft.)	128,073
	roof structure	Steel frame w/steel deck 19,568 SF @ $8.80	172,198
	roof cover	Built-up composition 19,568 SF @ $1.85	36,201
	Insulation	Roof - rigid insulation board 19,568 SF @ $1.55	30,330
	exterior walls	12" Brick w/block back-up curtain wall 9,472 SF @ $19.65	186,125
	exterior walls		
	Doors (2)	8' x 12' Steel sliding overhead w/electric operator @ $21.50/SFDA	4,128
	Doors (2)	3' x 7' Metal single walk-in @ $69.95/SFDA	2,938
	Glass/brick front	64SF @ $18.45/SFDA + 3' x 7' alum. frm door @ $1,300 each	2,481
	floor constr.		
	floor constr.	6" Concrete slab 19,568 SF @ $3.85	75,337
interior construction			
	partition	8" Concrete block P-2S 120' x 10' @ ($8.40 + $1.50) = $9.90	11,880
	partition	2"x 4" - 16" oc steel stud w/½" drywall	
		P-2S 9' x 200' @ ($2.30 + $2.70 + $1.50) = $6.50	11,700
	wall finish		
	wall finish		
	ceilings	Mineral fiber tile w/suspension 2,000 SF @ ($1.35 + $1.25) = $2.60	5,200
	ceilings		
	Mezz.	Concrete floor unfin. w/stairs & safety railing	
		2,000 SF @ $23.15 /SFFA	46,300
	floor finish	Nylon carpet w/pad - economy grade - 656 SF @ ($ 3.10 = .80)	2,558
	floor finish	Vinyl tile - 1,344 SF @ $2.35	3,158
	Electrical	Avg. service rigid conduit ind. - 17,568 SF @ $6.05	106,286
mechanical	electrical	Avg. service rigid conduit ofc. - 2,000 @ $14.60	29,200
	plumbing	Six Type 2 @ $3,590 each, Eight type 3 @ $3,835 each	52,220
	heating	Ind., 17,568 SF @ ($1.70 x 1.06 - 2 ft. hgt. adj. @ 3%/ft)	31,658
	ventilation		
	air condition	Office 2,000 SF @ $11.90 (zoned hot/cold air)	23,800
	sprinkler system		
	dock		

Data Bank		Use		S C M I	Grade C	Total	$ 1,027,843
SF Ground Area	19,568	Store		C 1.00 D 1.00	G 1.00 NH 1.00	A 1.00 =FAC	1.00
Eff. Perim LF	592	Factory	✓	Eff. Age 14	Eff. Age 14	CDU Avg/Avg	Age 14
CF of Bldg.	313,088	Office					Replacement Cost New $ 1,027,843
SF Wall Area	9,472	WH		Date: 1/06			REL 0.65
Wall Ratio	33.05						Full Value $668,098

PRC-5 (R-1/00)

Memo

Ownership & Mailing Address	Township	Tax Code	Area	Sect.	Block	Parcel	Unit
McCall's Patterns Stupendville, IL 77777			03	30	333	003	0080
	Division		NH Code		Card No. ____ of ____		Condo. Comm.
			Property Class		Land Use		Zoning
Property Address							

1 Earthwork: site preparation for building area 19,568 SF
2 Plant eng. in for: ftgs. 2 ½' x 1' spread concrete & foundation 14" concrete walls 32" to top of ftg.
3 Frame ordinary steel w/f column & beams bays typ. size 24' x 20'
4 Roof structure: steel bar joist & corr. steel deck
5 Built-up composition cover & insulation 1 ½"
6 Exterior curtain walls: 12" concrete block with 4" face brick
7 Doors 2: 8' x 12' steel overhead with electric opener; 2 - 3' x 7' steel walk-in
8 Aluminum frame front w/door
9 Floor construction: 6" concrete slab (est.)
10 North & west exterior office partitions: 8" concrete block P-2S 120' x 10' = 1,200 SF
11 Interior office partitions: steel studs ½" drywall & P-2S 200' LF x 9' = 1,800 SF
12 Office ceiling suspended tile mineral fiber
13 Mezzanine: 2,000 SF unfinished concrete framed
14 Office carpet: 2 private offices - nylon carpet & pad 656 SF total
15 Balance of office: floored w/vinyl asbestos tile 1, 344 SF
16 Office & plant displays, adequate lighting & service outlets - all in rigid conduit
17 Office: 2-stool, 2-lav., 1 urinal, 1-w.h.; Plant: 4-stool, 2-lav., 1-urinal, 1-w.h.
18 Office: zoned hot/cold air system; Plant: suspended space heaters

PRC-9 (R-6/99)

Industrial Section

Index of CIP Schedules

CIP Schedules

Earthwork

Demolition (per CF of building)	$0.30
Site preparation (per SFGA)	0.15
Excavation (per CF earth removed)	0.10
Fill, compacted (per CF of fill)	0.40

Foundation walls (including footings)

Concrete*

Rating	Supported area above foundation	Per LF
Light	Up to 2 stories	$ 106.65
Medium	3 — 6 stories	116.50
Heavy	7 — 10 stories	126.60
X-heavy	Institutional	145.50

Concrete block*

Medium	1 story	$ 64.50
Heavy	Over 1 story	94.05

Strip footings only
(12” deep — without foundation walls)

Width	Per LF
	Reinforced
24”	$ 34.80
32”	40.10
40”	45.35
48”	60.15

*Prices based on 4’ wall height — includes asphalt damp proofing.

Basement walls (including footings)

Wall const.	Thickness	Height	Per LF
Reinforced concrete	8”	8’	$ 176.95
		9’	194.75
		10’	212.50
		12’	253.85
	12”	8’	204.50
		9’	224.40
		10’	244.35
		12’	289.90
		16’	379.65
Concrete block	8”	8’	124.95
		9’	136.30
		10’	147.65
		12’	170.35
	12”	8’	159.30
		9’	173.65
		10’	187.95
		12’	217.40
		14’	245.70
		18’	302.70
Brick (solid)	8”	8’	236.20
		9’	261.45
		10’	286.75
		12’	337.25
	12”	8’	263.85
		9’	291.25
		10’	318.65
		12’	374.20
		14’	428.65
	16”	8’	403.80
		9’	448.60
		10’	493.40
		12’	583.00
		14’	672.25

Piling (cost per LF of piling)

Diameter or Size	Wood untreated	Wood creosote	Pre-cast concrete	Concrete in steel pipe	Concrete in drilled hole	Steel H-column
8”	—	—	—	$34.70	—	$31.85
10”	$13.80	$18.40	$27.90	42.20	—	42.00
12”	17.55	23.05	35.00	49.15	$27.90	52.95
14”	22.05	28.25	42.35	—	—	64.45
16”	27.40	34.10	50.00	63.15	33.40	—
18”	—	—	57.80	76.15	—	—
24”	—	—	83.15	103.20	49.90	—
36”	—	—	—	—	89.55	—
48”	—	—	—	—	161.50	—
Average setup cost	$13,895	$13,895	$21,350	$22,195	—	$14,660

Example:

104 - 10” x 35’ H-column piles (104 x 35’ x $36.50) =	$132,860
Plus average setup cost	$ 12,705
Total cost of pilings	$145,565

CIP Schedules

Structural framing (cost per SFFA)

Structural framing costs are provided below by correlation of an approximate frame bay area and the framing construction type. The derived costs are to be applied to all areas of a building that are structurally framed. Cost does not include truss or roof structure.

Base prices are for 14' story height, add or deduct 5% for each foot of column height variation. This adjustment is to be made before entering the price in the computation ladder.

Construction material	Frame bay area			
	Through 400 SF	401 SF to 1,200 SF	1,201 SF to 2,000 SF	Over 2,000 SF
Wood post and beam	$ 3.65	$ 4.00	$ 4.35	$ 4.75
Ordinary steel	5.40	5.95	6.50	7.00
Fireproof steel	13.55	14.90	16.25	17.60
Concrete column and beam	12.85	14.10	15.40	16.70
L/B w/interior supports	1.50	1.65	1.80	1.95

Roof construction

Structures and decks

Structure	Deck	Per SFRA
Wood structure	Wood	$4.05
	Corrugated or ribbed metal	5.80
Steel structure	Wood	4.90
	Corrugated or Ribbed metal	5.95
	Steel cellular	8.80
	Gypsum plank	5.55
	Formed concrete	10.85
	Pre-cast concrete	9.50
	Poured concrete or gypsum on steel deck	7.70
Concrete structure	Formed concrete	9.95
	Pre-cast concrete Joist & deck	8.70

For monitor or sawtooth roof add 40% to above costs.

Trusses (cost each truss)

Span	Steel		Wood	
	Light*	Heavy*	Light*	Heavy*
20'	—	—	$ 970	$ 1,260
30'	$2,550	$3,780	—	—
40'	3,430	5,010	2,390	3,200
60'	5,270	7,560	3,940	5,530
80'	7,050	10,180	5,620	8,180
100'	8,860	12,740	7,470	10,960
120'	—	15,350	9,440	14,060
140'	—	17,880	11,510	17,330
160'	—	20,460	—	—

*Light trusses are those carrying roof loads only. Heavy trusses are those carrying additional load of hoists or cranes.

The above trusses are for heavy industrial use buildings. When computing a lighter industrial or commercial use building that has wood truss roof construction use the table below.

Wood	Per SFFA
Light duty	$2.50
Heavy duty	3.15

Roof cover

Type	Per SF
Aluminum	$ 4.25
corrugated or ribbed shingles	4.10
Asbestos cement (transite)	
corrugated	5.65
shingles	4.15
Built-up comp.	1.85
Add for gravel	0.30
Clay tile	8.20
Composition shingles	2.45
Concrete tile	5.00
Copper-flat or standing seam	11.70
Fiberglass-corrugated or sheet	2.00
Lead	10.85
Roll comp.	1.05
Slate	8.00
Steel	
galvanized, corrugated, or ribbed	4.00
porcelain enamel	3.15
Synthetic rubber membrane	4.10
Wood	
shingles	3.35
shakes	3.60

Roof insulation (per SF insulation)

Insulation type	Per SFIA
Batts or roll insulation	$ 1.20
Rigid insulation board	1.55
Sprayed foam on deck 1"	2.40
2"	4.15

Gutter and downspouts

Construction materials	Per LF
Aluminum	$ 6.35
Copper	15.60
Galvanized metal	6.90

CIP Schedules

Exterior wall coverings

This schedule starts with the wood or metal studs to which the cost of sheathing, insulation, *etc.*, must be added. For build-up of the interior of the wall, see the interior wall finishes schedule to complete the wall cost.

		Per SFWA
Framing		
wood studs		
2 x 4 -	12" oc	$ 2.20
	16"	1.75
	24"	1.30
2 x 6 -	12" oc	2.95
	16"	2.30
	24"	1.75
4 x 4 -	24" oc	2.95
	36"	2.30
	48"	1.90
steel studs		
2 x 4 -	16" oc	2.30
2 x 6 -	16" oc	2.65
Sheathing		
asphalt composition		1.15
fiberboard		1.10
gypsum board		1.50
plywood		1.45
wood boards		1.95
Insulation		
aluminum foil, paper backing		0.45
batts or roll		0.70
polystyrene		1.25
loose fill in stud walls		1.45
Exterior facing		
aluminum siding, corrugated		4.15
enameled		3.70
transite		3.90
metal sandwich panels		12.75
fiberglass		1.85
galvanized steel, corrugated		3.90
flat enameled steel		4.40
hardboard, masonite		2.55
Masonry veneers		
face brick common		12.35
used brick		11.80
cast stone, ornamental		26.10
ashlar stone		32.30
granite		43.65
limestone		36.55
marble		52.05
slate		34.25
Stucco		
on wire mesh		3.90
on metal lath		4.25
on masonry		3.20
Wood shakes, shingles		3.15
plywood panels		4.10
board and batten		4.20

Special finishes: For these items, depending upon the backing, a cost for furring may be required.

Concrete block	
screen	10.55
split-face	11.25
ceramic tile	13.80
terra cotta	28.70
structural glass (vitrolite)	23.30
glass block	40.15
Additions for furring	
wood	1.00
masonry	1.15
Paint	
on masonry	1.00
on stucco	1.15
on wood	1.15

Exterior wall construction

Normally wall costs are priced for the total wall area when openings for doors, windows, *etc.,* are only a small percentage of the total. The price of doors, windows, *etc.,* is then added. When the openings represent over 20% of the total wall area, they should be deducted from the wall area before pricing the wall. For walls over 25 feet in height, add 1% for each foot.

Masonry load-bearing walls		Per SFWA
Concrete block	6"	$ 15.40
	8"	16.55
	12"	18.90
Brick, common	8"	22.30
	12"	27.25
	16"	32.30
Brick, block backup	8"	19.95
	12"	22.30
Clay tile	6"	16.45
	10"	19.30
Concrete formed	6"	18.60
	8"	20.10
	12"	22.85
Add for pilasters		1.15

Wood or steel framed load-bearing walls

Wall cost includes studs	Per SFWA
Aluminum siding	$ 13.35
Wood shingles	13.50
Wood siding	12.75
Cement fiber asbestos siding	13.00
Brick veneer	19.10
Stone veneer	29.35
Stucco	13.20
Add for sheathing	0.90
Add for insulation	0.70

CIP Schedules

Curtain (non-bearing) walls

Curtain walls (or panel walls) are exterior walls that enclose a building but do not support upper floors or roof construction. The price given is for the curtain wall only and includes no costs for structural framing that should be priced from the appropriate framing schedule.

Type		Per SFWA
Concrete tilt-up panels	4”	$ 12.55
	6”	13.45
	8”	14.45
	10”	15.60
Brick, block backup	8”	17.55
	12”	19.65
Brick, solid common	8”	19.65
	12”	24.15
Add for face brick		2.40
Concrete block	6”	13.60
	8”	14.60
Add for int. core insulation		0.60
Concrete formed	6”	16.40
	8”	17.75
	12”	20.30
Clay tile	6”	14.40
	10”	16.90
Concrete and glass panels		24.40
Metal and glass panels		26.60
Stainless steel and glass		39.25
Marble or stone panels		37.40
Glass block		37.40

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Doors (industrial)

Type	Per SFDA
Steel roll-up	$ 19.70
Fiberglass overhead	21.30
Wood panel overhead	16.55
Steel	
rolling	20.65
overhead	13.55
vertical lift electric	106.70
Add for electric operation	
roll-up door	8.60
overhead	7.95
rolling	9.20
Walk-in	**Per SFDA**
Metal clad	
ind. swinging single leaf	$ 69.95
ind. swinging double leaf	66.60
office swinging single leaf	35.10
Fire doors	**Per SFDA**
rolling	$ 44.50
swinging	49.10
Add for electric operation, each	1,795.00

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Windows

Type frame		Per SF window area
Steel sash, fixed, industrial		$ 16.35
	vented, industrial	19.75
Aluminum sash, awning		21.20
	casement	18.00
	sliding	12.50
	jalousie	20.15
Add for	1/4” wire glass	13.00
	1/4” plate glass	3.70
	double glazed	5.85
	solar glass	14.40

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Store fronts

Type	*Per SF display area
Wood framed glass & trim with	
wood siding	$ 11.45
brick	13.20
ceramic	13.65
marble or granite	20.80
Steel framed glass & aluminum trim with	
brick	18.45
ceramic	18.90
marble or granite	26.05
Steel framed glass & stainless steel or bronze trim with	
brick	27.35
ceramic	27.85
marble or granite	35.00

*In calculating the total display area include surface area of all glass, sign, and bulkhead areas, including entrance way, islands, *etc.*

Additions to basic store fronts

Display platforms (per SF)	$ 6.40
Display ceiling (per SF)	3.90
Display back (per SF)	6.80
Entrance doors	
Revolving door, each	32,850.00
Hinged aluminum & glass, each	1,300.00
Hinged bronze or stainless, each	2,700.00
Sliding panel, aluminum & glass (per SF)	25.95
Add for bronze or stainless steel	25%
Add for automatic door opener (per door)	4,800.00
Security gates	
Scissor type folding gate painted steel, each	800.00
14 roll-up grille, alum. manual, each	
4’ high x 4’ long	1,905.00
4’ high x 6’ long	1,965.00
4’ high x 8’ long	2,295.00
4’ high x 12’ long	2,600.00
4’ high x 16’ long	3,375.00
6’ high x 4’ long	1,995.00
6’ high x 6’ long	2,085.00
6’ high x 8’ long	2,385.00
6’ high x 12’ long	2,980.00
6’ high x 16’ long	3,850.00
Marquees (per SF)	
Plain, steel framed	27.95
Ornamental, steel framed	35.90
Plain, wood framed	25.95
Wood or stucco, wood framed	22.80
Illuminated plastic, single face	83.20

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CIP Schedules

Interior partitions

Construction type		Per SFWA
Wood stud wall frame		
2 x 4 -	12" oc	$ 2.20
	16"	1.75
	24"	1.30
2 x 6 -	12" oc	2.95
	16"	2.30
	24"	1.75
Steel stud wall frame		2.95
2 x 4 -	16" oc	2.30
2 x 6 -	16" oc	1.90
Masonry construction cost		**Per SFWA**
Concrete block	4"	6.60
	6"	7.55
	8"	8.40
	10"	9.40
	12"	11.40
Clay tile	4"	10.60
	6"	12.15
	8"	14.45
	10"	26.50
	12"	28.90
Common brick*	8"	22.95
	12"	33.35
		10.45

*For each additional 4" of thickness add $9.05/SFWA

Cubicle partitions

These are trackless, moveable shop partitions. The panels are semi-acoustical and at least 1 5/8" thick.

Construction type	Per SFWA
Enameled panels, flush	$ 17.85
Vinyl covered, flush	16.40
Wood and composition	13.35
— For less than 8' wall height	deduct 10%
— Do not deduct for door openings, add for each	
hollow metal door	$ 1,470
hardwood door	1,485

Accordion or folding partitions

Type	Per SF
Wood — low acoustical	$ $26.65
Wood — acoustical, vinyl faced	62.00
Formica or hardwood finish	32.20

Floors

Basement & grade slabs	Per SFFA
Concrete, including prepared base, reinforced 4"	$ 3.15
6"	3.85
8"	4.75
Asphalt, including prepared base, 2"	3.40
Structural floors (above grade)	**Per SFFA**
Steel joists, corrugated deck & concrete	13.10
cellular deck & concrete	15.55
concrete slab	15.10
precast plank	12.90
wood deck	8.85
steel grating	30.45
Precast concrete joists & slab	11.60
Elevated concrete slab	13.40
Wood joist & deck	7.75
Pan or waffle (formed concrete)	12.20
Add for insulation	0.90
Add for fire proofing	1.65

Office partitions

Grade	Finished divided Per SFFA*	Finished open Per SFFA**
Economy	$26.20	$18.90
Average	30.80	22.25
Good	35.40	25.55
Excellent	40.05	28.90

Note: Base story height 8' - add or deduct 4% per foot of each foot of wall height variation.

* Finished divided costs include suspended ceiling with grid, average lighting and electrical service, wood framed perimeter and partitions with painted drywall, office doors, and average carpet.

** Except for partitions, finished open costs include the same items as finished divided costs.

Office enclosures

Approximate office size	Finish quality (per SF)			
	Econ.	Avg.	Good	Excl.
Up to 2,500 SF				
Wood frame partitions	$ 19.25	$ 24.85	$ 32.10	$ 41.45
Masonry partitions	21.05	27.05	34.70	44.55
Over 2,500 SF	Build from CIP schedules			

Note: Most partitions and enclosures will fall into the good or avg. categories. Partitions or enclosures with extravagant, exclusive and/or super-adequate characteristics should be considered excl. Partitions and enclosures with limited amenities and sub-standard basic structures should be classified as econ.

CIP Schedules

Pre-fabricated shop offices

Pre-fabricated aluminum framed booths including doors, floors, lighting, HVAC, *etc.*

Approx. office size	Per SFFA
50 SF	$ 185
80 SF	150
100 SF	135

Woven wire partitions (each)

Wall panels	$ 185
Ceiling panels	220
Sliding door - 3' wide x 7' high	585
Sliding door - 6' wide x 7' high	735

Toilet partitions

	Each		Each
Marble	$2,450	Stainless steel	$1,850
Painted metal	860	Handicap additions	435
Plastic laminate	1,045		

Urinal screens

Marble	$ 845	Stainless steel	$ 930
Painted metal	355	Plastic laminate	600

Stairs (per tread)

Concrete, reinforced on ground	$ 175
on steel frame	275
Steel grate with steel frame	315
Wood	105
Spiral, ornamental cast iron	340
industrial steel	405
For stair landings	
concrete free standing	18.85/SF
on ground	8.65/SF
For 1 1/2" round steel railing	58.75/LF

Mezzanines (cost per SFFA)

Mezzanine costs include the framing support system, the floor system, stairways, and lighting. Where applicable typical partitioning, floor, wall, and ceiling finishes are also included. A height adjustment is not applicable to the mezzanine cost. Mezzanines created by a structural floor over interior partitions should be priced by using appropriate CIP schedules for each construction and/or finish component.

Mezzanine finish	Construction	
	Steel framed	Concrete framed
Unfinished	$17.75	$23.15
Store, display (finished open)	29.55	41.70
storage	17.55	23.15
Office (finished divided)	39.60	56.60

For wood framed mezzanines use 65% of the steel costs.

Interior wall finishes

Construction type	Per SFWA
Drywall, taped & sanded, 1 side	$ 1.35
Plaster	
on masonry	2.80
on and including lath	4.10
Paint	
on masonry	0.75
on plaster, drywall, wood	0.75
Ceramic tile	7.30
Wood paneling	
minimum	5.30
maximum	8.80
Wallpaper,	
average	1.05
good	1.65
excellent	3.00
Specialities	
Acrylic glazed coatings	1.65
Epoxy coatings	2.55
Vinyl sheet plastic	1.80
Copper sheet	8.05
Cork tile or sheet	5.20
Marble veneer - up to 3/4"	48.75
Granite veneer - up to 2"	74.50
Limestone veneer - up to 2"	47.95
Furring	
on wood	1.15
on block or brick	1.25
on concrete	2.15

Ceilings

Construction type	Per SFCA
Acoustical tile	
aluminum, perforated	$ 5.10
mineral fiber	1.35
Drywall	
finished	1.65
Add for	
painted	0.65
textured spray	0.60
Plaster on lath,	
plain	5.15
acoustical	6.30
Plywood panel	
softwood	4.60
hardwood	10.85
Luminous plastic panel	3.55
Eggcrate plastic panel	2.90
Add for	
suspension system	1.25
furring	1.90
insulation	1.00

CIP Schedules

Floor finish

Type	Per SFFA
Carpet	
economy grade	$ 3.10
good grade	3.90
excellent grade	5.75
Add for pad	0.80
Composition	
epoxy, troweled	9.40
epoxy w/ chips	7.55
terrazzo	15.25
acid-proof	12.15
Concrete toppings	
cement troweled, 1/2”	2.60
cement troweled, 1”	3.45
Add for coloring	1.80
Add for hardener & sealer	1.50
Resilient	
vinyl or asphalt tile	2.35
vinyl sheet	6.45
rubber tile or sheet	11.20
cork tile	6.45
synthetic turf	9.80
Brick, stone & tile	
brick, common in	
mortar-acid-proof	15.35
decoration pattern - add	20%
ceramic or quarry tile	11.80
marble	22.10
terrazzo	11.95
slate	9.95
flagstone	17.00
Wood	
block, end grain	8.05
hardwood	9.10
softwood	5.20
parquet blocks, pre-finished	24.00
Add for sleepers, 24” oc	
1” x 2”	1.65
2” x 4”	1.00
2” x 6”	0.90
Computer floor, raised	
metal on plywood	12.95
aluminum panels	41.50
w/vinyl covering - add	7.75
w/high pressure laminate - add	5.20
w/carpet cover - add	7.65
Paint	
on masonry & porous surface	0.75

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Electrical and lighting (cost per SFSA)

Cost includes electrical panel, wiring, and average grade lighting fixtures & devices all in place. The price does not include special wiring such as alarm or signal systems.

Type service	Comm.	Ind.	Ofc.
Scant service			
flexible conduit	$ 5.85	$ 3.00	$ 8.30
rigid conduit	7.00	3.55	9.95
Average service			
flexible conduit	8.55	5.10	11.90
rigid conduit	10.20	6.05	14.60
Abundant service			
flexible conduit	12.45	8.70	17.10
rigid conduit	14.95	10.25	21.45
Unfinished areas			
flexible conduit	2.40	1.95	2.80
rigid conduit	2.90	2.35	3.30
Power wiring		9.10	

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Cost by use

Listed below are typical average electrical system costs according to certain occupancies. The unit price is to be applied to floor area of electrical service.

Use type	Per SFSA	Use type	Per SFSA
Banks	$ 16.10	OFC bldgs.	
Bowling alleys	8.10	low quality	$ 10.05
Dept. stores	11.55	high quality	12.90
Discount stores	4.70	Retail stores	6.20
Garages		Restaurants	
service	6.45	low quality	10.80
storage	3.40	high quality	18.55
parking	3.80	Showrooms	9.70
Manufacturing	8.70	Warehouses	2.10

Cabinets — counters

Type	Per LF
Base with doors (w/o counter top)	
hardwood	$ 141.80
enameled steel	141.80
painted wood	113.40
add for drawer unit	50%
Wall	
hardwood	105.50
enameled steel	111.15
painted wood	93.00
Tall lab storage cabinets	215.50
Counter tops	
plastic	60.10
ceramic	89.60
stone	191.10
stainless steel	121.95

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CIP Schedules

Plumbing

The typical fixture cost is for sinks, water closets, tubs, water heaters, urinals, *etc.* The cost includes amounts for the fixture, water supply, waste, and vent lines. Exterior piping to the building is not included.

Typical fixtures

Residential Type 1	Commercial Type 2	Industrial Type 3	Specialty Type 4
$1,465	$3,590	$3,835	see below

Specialty fixtures

	Each
Drinking fountain	
floor	$ 2,240
wall	1,605
Electric water cooler	1,760
Laundry tub	
single	1,255
double	1,215
Sump pump	520
Janitor's sink	2,185
Emergency shower or face wash	1,300

Cast iron trough sinks		
4 faucet	48"	2,065
8 faucet	96"	3,475
Add for stainless steel		20%

	36"	54"
Circular wash sinks		
polished cement	$3,030	$3,475
terrazzo	3,140	3,605
enameled steel	3,475	3,875
stainless steel	3,735	4,295

	36"	54"
Semi-circular wash sinks		
polished cement	$2,660	$3,045
terrazzo	2,790	3,235
enameled steel	3,095	3,525
stainless steel	3,430	3,875

	Enameled steel	Stainless steel
Column showers		
circular (per shower head)	$ 495	$ 685
semi-circular (per shower head)	650	895

Single stall shower	
w/receptor & curtain hanger	$ 835
w/receptor & hinged door	1,180
Open showers up to 12 spray	
minimum	$ 1,860
maximum	2,725

Note: Above prices do not include partitions.

Heating — ventilation air conditioning (HVAC) (per SFFA)

Prices for HVAC are provided below according to finish or use of the building (or area within the building). The prices were developed on the basis of heating, ventilation, or air conditioning cubic area and then converted to SF costs for the convenience of the assessor. Because of this, it may be necessary to adjust the costs for height. The base height is 14' and 3% of the cost indicated should be added or deducted for each foot of height variation in your subject building.

Type	Comm.	Ind.	Ofc.
Electric baseboard	$3.05	$2.95	$4.50
Electric wall/floor heaters	1.35	1.35	1.80
Heat pump, heat and cool	6.55	7.00	9.25
Forced warm air, central system	3.15	3.15	4.95
Ventilation only w/ducts	0.95	1.00	1.40
Hot water baseboard	5.60	5.55	7.90
radiant floor	5.60	5.45	7.75
Steam radiators			
w/boiler	5.00	5.10	7.35
w/o boiler	4.05	4.25	6.25
Suspended unit heaters			
gas fired	1.65	1.70	1.90
w/steam or hot water coil	1.60	1.65	—
Zoned hot & cold water	13.55	13.85	18.65
Zoned hot & cold air	8.00	8.15	11.90
A/C central forced air	5.60	5.45	6.35
package floor units	3.75	3.80	4.50

Suspended unit heaters (cost each)

In those instances where a building has a very limited number of individual heating units, the above square foot cost might not be applicable. For a more reasonable cost estimate each individual heater should be priced separately. The costs are provided below and need not be adjusted for story height.

BTU rated capacity	Cost each	BTU rated capacity	Cost each
35,000	$ 1,215	150,000	$1,860
75,000	1,440	250,000	2,520
100,000	1,535	400,000	4,120

Electric heaters (cost each)

Infra-red ceiling or wall
1 kw: $370 2 kw: $490 3 kw: $625

Infra-red modular baseboard or wall units
1 kw: $330 3 kw: $555 5 kw: $640

Ventilators

Roof power driven	Cost each	Roof gravity type	Cost each
12"	$ 575	12"	$ 315
18"	800	24"	585
24"	1,105	30"	715
30"	1,550	36"	855
36"	2,165	48"	1,105
42"	2,975		
48"	4,140		

For wall mounted power ventilators, deduct 10% from cost of roof power drive ventilators.

CIP Schedules

Fire protection equipment

Hose house	Each
Metal	$ 1,265
Hose house equipment	
100 LF industrial fire hose	
1½" diameter	255
2½" diameter	410
Hose racks	
swinging w/125'	430
1½" hose	
Alarm systems	
4 zone w/control panel	1,800
8 zone w/control panel	3,020
12 zone w/control panel	4,115
Remote annunciator	
8 zone lamp	550
12 zone lamp	835
16 zone lamp	910

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Fire pumps

Including controls and accessories (not including piping).

GPM	Electric	Diesel
500	$23,100	$72,100
750	28,500	77,900
1,000	34,000	82,300
1,500	42,600	89,400
2,000	50,300	94,200
2,500	57,400	98,700

Pump houses

Includes concrete floor, wall & roof construction, pump pits, lighting, water connection, and doors.

Type construction		Per SF
Corrugated metal	wood frame	$ 58.55
	steel frame	60.05
Concrete block	load bearing	86.05

Add for space heater from HVAC schedule 32

Add for underground pipe from schedule 69

Fire escapes

Counterbalanced

Two story building	$ 5,300
Each additional flight	3,000

Balcony and stairs

Steel balcony - 2' wide (per LF)	$ 185
3' wide (per LF)	370
Steel stairs - 3' wide (per flight)	4,755

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Ladders	Per VLF
Steel, bolted to building	
w/cage	$ 140
w/o cage	70
Aluminum, bolted to building	
w/cage	170
w/o cage	100

Fire sprinkler system

Sprinkler costs include all interior heads, supply lines, and accessories. Wet system piping contains water at all times; dry pipe system contains air under pressure and is used in those unheated areas where freezing might be encountered. For dry pipe systems, add 10% to the wet system prices.

Exterior pipe, alarm systems, and fire pumps should be added to the costs below.

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Area serviced	Cost per SFSA	
	Ordinary hazard*	Extra hazard**
Through 1,000 SF	$ 5.00	$ 6.70
1,001 - 2,000	5.55	6.65
2,001 - 5,000	3.45	5.15
5,001 - 10,000	3.20	4.95
over 10,000	3.10	5.00

*Ordinary hazard occupancies include stores, commercial, offices, garages, factories, warehouses, *etc.*

**Extra hazard occupancies include aircraft hangers, chemical works, linoleum manufacturing, paint shops and varnish works, solvent extracting, *etc.*

Underground fuel storage tanks

Gallons cap.	Fiberglass	Steel
550	$ 5,200	$ 4,000
1,000	6,400	5,300
2,000	8,100	6,800
4,000	10,200	9,000
6,000	13,500	12,200
10,000	17,900	16,600
12,000	20,000	18,800
15,000	24,500	22,900
20,000	32,000	29,800
30,000	47,300	43,700

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Price includes excavation, setting in place, and all backfill.

CIP Schedules

Escalators (cost per flight)

Story height	Stair width 32”	Stair width 48”
10’	$ 126,100	$ 137,200
12’	130,600	141,300
14’	134,400	146,400
18’	141,300	156,100
22’	149,500	167,100
25’	156,100	174,700

Add $1,105 per foot of rise per unit for glass panel sides.

Vertical lifts

Type	Cost
Dumbwaiter - 500#*	$ 34,500
Manlift**	15,500

* Add $3,400 for each stop over two.
Deduct 50% for manual operation.
** Add $3,700 per stop over two.

Dock gates

Hinged — diamond pattern — scissor type

	Width	6’ High
Single	5’	$ 495
	6’	505
	8’	550
Double	8’	800
	10’	850
	12’	1,110
	14’	1,185`

Additions

Add for	aluminum gates	125%
	stainless steel gates	150%
	bronze gates	250%
Door seals vinyl covered (per LF)		$ 49.00
Expandable truck & RR shelter (each)		2,785.00
Rubber dock bumpers		
12” high x 14” long (each)		130.00
	24” long (each)	150.00
	36” long (each)	170.00

Retaining walls

Prices are for exposed face area and includes concrete footing 3’ below grade.

Type		Per LF
Concrete block	6’ high	$ 127.05
	8’	193.30
	10’	222.75
Reinforced concrete	6’ high	211.20
	8’	255.30
	10’	299.40

Loading ramps and wells

Type	Per SF
Truck ramp - concrete, 0’ to 4’ rise	$ 31.90
Truck well - concrete, 0’ to 4’ deep	31.95
Truck or RR well, grade level, 4’ high concrete side walls	20.65
Deduct for asphalt floor	3.75
Add for handrails (per LF)	58.75

Dock levelers

Deck size	Capacity (lbs.)	Cost each
6’ x 8’ fixed	5,000	$13,000
6’ x 8’ hinged	20,000	6,800
7’ x 8’ hinged	20,000	6,600
6’ x 8’ hydraulic	20,000	11,000
7’ x 8’ hydraulic	20,000	11,700

Dock canopies

Type	Per SF
Simple wood or steel without lighting	$ 8.20
Good structure with lighting, soffit	12.15
Add (per SF) for sprinkler system	
up to 1,000	5.00
2,000	5.55
5,000	3.45
10,000	3.20
over 10,000	3.10

Loading docks

Concrete: Includes concrete foundation, floor, retaining walls, bumpers, and steps.

Dock Width	SF Costs where length is 10’	20’	30’	50’	100’	200’
5’	$ 75.65	$ 54.10	$ 46.85	$ 41.10	$ 40.95	$ 37.55
10	53.90	37.15	30.05	25.80	22.55	20.95
15’	43.10	29.05	24.40	20.70	19.40	17.50
20’	39.05	25.95	21.60	18.95	16.25	14.80
30’	37.05	24.00	19.70	16.85	14.45	12.90

For concrete block walls ..... deduct 5%

Wood: Includes concrete piers, wood posts & girder framework, bumpers, and steps.

Light construction - 2” plank or 2” joists ..... deduct 25%
Heavy construction - 4” plank or 4” joists ..... add 50%

CIP Schedules

Cold storage refrigeration

For accurate cost build-up of cold storage plants, determine the basic building cost then add for the insulation, doors, refrigeration equipment, *etc.*

Insulation (per SFSA)

Apply costs to insulated surface area of the walls, ceilings, and floors. Costs do not include prices of inner walls or partitions that may be of concrete, concrete blocks, or wood that must be priced from the appropriate CIP schedule. For coolers or freezers without floors, deduct 23% from total costs.

Type	1"	2"	4"	6"	8"
Cork	6.35	7.30	9.35	11.50	13.45
Fiberglass board	5.60	5.75	6.35	6.70	7.15
Foamglass board	6.45	7.70	9.90	12.25	14.55
Mineral wool batts	5.10	5.20	5.75	6.25	6.70
Styrene board	5.10	5.30	5.75	6.40	6.85
Urethane board	5.60	6.60	8.35	10.25	12.15
Urethane sprayed	3.65	5.10	7.85	10.90	12.45

Doors (per SFDA)

Costs are for manually operated, hinged, galvanized doors.

SFDA	2"	4"	6"	8"
Up to 15 SF	$119.65	$128.15	$136.95	$ 146.40
16 - 25	102.70	112.15	121.30	132.40
26 - 40	86.10	96.20	107.30	119.35
Over 40	72.40	82.50	93.90	106.30

For other doors, use the following adjustments.

Stainless steel ..... add 50%
Wood clad ..... deduct 10% per side
Sliding doors - single ..... add 25%
double ..... add 40%

Add for electric operators by door type
Hinged - single ..... $ 3,015 each
double ..... 4,205 each
Sliding - single ..... 5,445 each
double ..... 6,230 each

Walk-in boxes — prefab

Cost includes complete galvanized unit 7'6" high, including doors, floors, and refrigeration equipment. For wood exterior and interior, deduct 10%. Without floor, deduct 6%.

Size	32^{0}F to 60^{0}F	5^{0}F to 31^{0}F	-15^{0}F to 5^{0}F
50 SF	$11,300	12,300	12,900
100	16,100	17,300	18,100
200	23,000	24,400	29,200
300	28,200	29,800	34,500
400	32,700	36,200	38,900
500	36,700	40,200	42,900

Refrigeration equipment

Room type	Per CF
Cooler, up to 50^0 F	$ 1.05
Chiller, up to 0^0 F	1.30
Freezer, below -15^0 F	1.55
Sharp freezer, below -30^0 F	1.90

Accessories

	Per SF
Shelving - plated or galvanized	$22.15
Stainless steel shelving	46.95

Passenger elevators (electric)

Costs include shaft, penthouse, cab, and automatic controls for passenger-operated (push-button) elevator with power-operated doors. Deduct 10% for manual controls.

Speed	Capacity (lbs.)	Cost per elevator	Add for each stop
100 FPM	2,000	$ 73,600	$ 5,300
	2,500	82,200	"
	3,000	90,800	"
150 FPM	2,000	84,200	"
	2,500	93,900	"
	3,000	103,400	"
200 FPM	2,000	93,200	"
	2,500	103,700	"
	3,000	113,000	"
250 FPM	2,000	101,000	"
	2,500	111,300	"
	3,000	121,200	"
300 FPM	2,000	107,700	"
	2,500	118,300	"
	3,000	128,200	"
350 FPM	2,000	113,700	"
	2,500	124,600	"
	3,000	134,200	"
Add for stop		5,300	

Passenger elevators (hydraulic)

Costs include shaft, penthouse, cab, and automatic controls for passenger-operated (push-button) elevator with power-operated doors. Deduct 10% for manual controls.

Speed	Capacity (lbs.)	Cost per elevator	Add for each stop
100 FPM	2,000	$43,100	$ 10,100
	2,500	49,900	10,700
	3,000	54,800	11,200
150 FPM	2,000	52,200	10,100
	2,500	59,400	10,700
	3,000	65,800	11,200
200 FPM	2,000	60,300	10,100
	2,500	67,500	10,700
	3,000	70,300	11,200

Freight elevators

Costs include complete installation as above. Deduct 10% for manual controls.

Speed	Capacity (lbs.)	Cost per elevator	Add for each stop: Manual doors	Add for each stop: Power doors
Hydraulic 50 FPM	2,000	$24,100	$ 6,500	$12,200
	4,000	30,500	7,200	13,200
	6,000	35,500	8,000	14,200
	8,000	38,700	8,500	14,800
	10,000	58,600	8,900	15,200
Electric 100 FPM	2,500	73,000	6,700	12,500
	4,000	77,900	7,400	13,300
	6,000	82,200	8,200	14,300
	8,000	85,600	8,600	15,000
	10,000	91,800	9,100	15,400

Add for rear door- manual ..... $ 8,300
power 14,400

CIP Schedules

Rail spur track

Complete including rails, ties, and ballast.

Rail weight	Rail size	Cost per LF	Add for switch and turnout
80#	5 x 5	$ 97.10	$32,100
100#	5 3/8 x 6	110.15	35,700
115#	5 1/2 x 6 5/8	119.30	38,700

Add for each sliding bumper $4,220
Add per pair of wheel stops 990

Railroad scales

Cost includes concrete pit and platform with steel scale mechanism.

Capacity	Cost
150 Ton	$ 85,100
175 ”	95,200
200 ”	106,600
250 ”	132,900
300 ”	166,600
350 ”	206,900

Industrial wells and pumps

Costs include the complete well installation excluding pumps. Price well pumps separate from wells.

Wells		Vertical pumps		
Size	Cost per VLF	GPM	HP	Cost
4” - 6”	$29.50	200	5	$ 9,210
8” - 10”	43.60	600	10	12,900
12” - 14”	62.80	1,000	20	17,800
16” - 18”	78.20	2,000	30	27,500
20” - 22”	94.85	4,000	60	47,400
24” - 26”	112.80	6,000	100	61,800
28” - 30”	129.45	10,000	150	105,000

Towers

Self-supporting (each):	
50'	$ 17,500
75'	34,600
100'	55,600
150'	109,500
200'	177,200
225'	215,600
250'	257,100
300'	348,900
350'	451,700
400'	564,600
Triangular guyed (Per LF Ht.):	
10" Ham radio, police, fire	$ 78.70
20" Taxi, public	122.75
24" Radio, V.H.F., U.H.F.	157.35
30" Cellular	204.60
40" Microwave	251.80
54" Television	503.60

Floor recessed scales

Cost of built-in floor scale includes cost of pit, scale, and platform. For wood platform, deduct 6%.

Capacity	Cost
4,000#	$ 8,400
6,000#	11,200
10,000#	16,100
20,000#	26,200

Truck scales

Cost includes pit, beam scale, and steel weight bridge. For wood platform, deduct 6%.

Capacity	Cost
20 Ton	$ 30,200
30 ”	35,000
40 ”	40,300
50 ”	45,500
60 ”	51,300
70 ”	59,400

Add for
automatic card printer ..... $ 1,800
remote reading electronic system 7,900

Traveling overhead cranes

Bridge span	Capacity			
	10 Ton	15 Ton	20 Ton	25 Ton
20’	$ 81,500	$ 94,100	$ 108,000	$ 124,500
30’	89,200	101,800	116,700	133,800
40’	97,600	110,900	126,400	143,500
50’	107,300	120,600	136,400	153,900
75’	134,800	149,300	165,800	183,900
100’	169,700	185,200	201,700	219,500

Costs are averages for ground controlled, variable speed, twin girder, and overhead cranes (exclusive of craneways). For cranes with cabs, add $5,000 for minimum controls; add $18,400 for deluxe cabs with air conditioning and complete controls.

CIP Schedules

Craneways (per LF)

Beam size	Supports 20' oc	Supports 25' oc	Supports 30' oc	Bldg. framing supported
12"	320	290	270	165
15"	365	330	305	185
18"	430	390	360	220
20"	480	430	400	245
24"	530	475	440	270
30"	620	560	515	315
36"	710	640	595	365

Prices are based on 16' height including craneways and supporting columns. Prices are for length of craneway. Add or subtract 5.5% for each 2' of variance from 16' base height.
Example:100 LF of 18" craneway beams with supporting columns 25' oc, 20' high =
$390 + (2 x 5.5% x $390) = $432.90;
100 LF at $432.90 = $43,290 craneway cost.

Industrial monorail cranes

Capacity (tons)			
2	3	5	10
$8,970	$9,385	$10,615	$13,725

Costs are for smaller industrial hoists where a lower capacity and headroom is required and where each has their individual craneway bracing or support system. The structural steel columns and beams of the support system must be priced and added to the hoist cost.

Above ground storage tanks

Gallons cap.	Steel	Wood
10,000	$ 26,300	$ 16,800
20,000	42,100	29,100
30,000	55,300	37,600
50,000	75,300	51,900
75,000	98,500	66,700
100,000	120,000	81,000
125,000	129,200	93,300
150,000	139,800	105,600
200,000	157,800	127,400
250,000	178,100	—
300,000	197,300	—
400,000	246,900	—
500,000	289,500	—
750,000	371,700	—
1,000,000	429,900	—

Price includes sand or gravel foundations, roofs, ladders or stairs, painting, fittings *etc.*

Add $1,600.00
per foot of diameter for pontoon floating roof.
Add $1,400.00
per foot of diameter for double deck roof.
Add $6.60
per SF of slab for concrete slab foundations.

Jib cranes — column or wall mount

Costs include column, boom, and base, if any. Capacities are for the jib crane only and costs do not include the price of the chain or rope hoist that must be added.

Boom length	Capacity	Cost
8'	1,000#	$ 1,970
8'	4,000#	3,230
8'	8,000#	4,945
12'	1,000#	2,390
12'	2,000#	3,040
12'	4,000#	4,200
12'	8,000#	6,560
16'	1,000#	3,040
16'	6,000#	7,110
16'	8,000#	8,730

Chain or rope hoists

Electric		Manual	
Capacity	Cost	Capacity	Cost
1,000#	$ 1,615	1,000#	$ 465
2,000#	1,905	2,000#	575
4,000#	2,570	4,000#	835
6,000#	3,150	6,000#	1,065

*Monorail hoist systems may be priced by adding together the costs of the single steel beam and the chain (or rope) hoist, each according to its size and/or its capacity.

Steel columns and beams

I beams		H beams	
Size	Per LF	Size	Per LF
4"	$ 28.05	4" x 4"	$ 33.10
6"	36.75	6" x 6"	42.65
8"	39.00	8" x 8"	56.15
12"	48.30	12" x 12"	94.30
15"	57.85	14" x 14"	103.85

CIP Schedules

Paving

Paving type	Per SFGA
Asphalt	
Binder course	
2” thick	0.65
3” thick	0.95
4” thick	1.25
Wearing course	
1 1/2” thick	0.55
2” thick	0.70
2 1/2 “ thick	0.85
Light traffic (drive-ins, parking lots, *etc.*)	1.20
Heavy traffic (truck stops, service stations, *etc.*)	2.25
Concrete	
6”	3.25
8”	4.45
9”	5.10
Crushed stone (includes grading)	
3”	0.50
6”	0.90
9”	1.30
Curbs	**Per LF**
Asphalt	
6” x 8”	2.65
8” x 8”	3.00
Concrete	
6” x 18” cast in place, straight	9.25
6” x 18” cast in place, curved	17.85
6” x 18” precast, straight	15.50
6” x 18” precast, curved	23.40
Granite	
5” x 16”	19.50
6” x 18”	24.00
Sidewalks	**Per SFGA**
Asphalt on ground	
2”	0.95
2 1/2”	1.10
Concrete on ground	
4”	4.00
5”	4.85
6”	5.40
Add for exposed aggregate	0.85
Prepared base (for above walks) 4”	1.05
8”	1.90
Steps	**Per LF tread**
Concrete	35.25
Brick	49.65
Railroad ties	34.20

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Yard lighting

Poles (installed)

Type		20’	30’	40’
Aluminum	1 arm br.	$2,105	$3,275	$4,110
	2 ”	2,225	3,400	4,235
	3 ”	2,385	3,550	4,415
	4 ”	2,510	3,675	4,540
Steel	1 arm br.	2,420	2,900	3,825
	2 ”	2,540	2,995	3,950
	3 ”	2,575	3,050	4,005
	4 ”	2,700	3,175	4,130
Wood 1 arm -	10’ high	750	—	—
	12’ ”	860	—	—
	15’ ”	955	—	—
	20’ ”	1,115	—	—

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Flood lights

Add to cost of poles and arms.

Type	Size	Cost each
Incandescent	500 W	$ 305
	1,000 W	360
	1,500 W	380
Metal halide	175 W	610
	400 W	725
	1,000 W	965
Mercury-vapor	400 W	620
	1,000 W	770
Sodium	400 W	710
	1,000 W	955

Fencing (per LF)

Type	Height 4’	6’	8’
Chain link	$ 9.75	$ 14.25	$ 18.70
Add for			
gates (swinging) each	475.00	590.00	685.00
motor operated	30%	30%	30%
vinyl cover add	10%	10%	10%
barbed guard, per LF	2.45	2.45	2.45
sliding add	25%	25%	25%
Cedar			
picket	17.15	24.35	—
split rail	11.75	—	—
stockade	—	15.30	—
Redwood			
picket	16.20	24.35	—
basket weave	20.55	29.60	—
Solid board	15.95	17.50	—
Add for gates, per SF	11.85	11.85	11.85
paint, per SF	0.40	0.40	0.40

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CIP Schedules

Signs

The cost estimate for a particular sign installation combines the cost of the display sign itself and the costs of the support columns or wall installation.

Type	Per SF sign
Painted metal	
single face	$ 49.15
double face (use SF of one side)	62.40
porcelainized (add per SFSA)	10.65
w/neon tubing (add per face)	40%
Plastic - illuminated	
single face	117.65
double face (use SF of one side)	167.10

Wall brackets	Per SF sign
Costs of brackets in place per SF sign surface, projected from wall	$ 8.10

Sign poles

Costs include concrete base. Estimate column height from ground to bottom of sign for horizontal signs and overall height for vertical signs.

Base dia.	Per LF	Base dia.	Per LF
4”	$ 50.05	10”	$ 113.75
6”	72.30	12”	134.75
8”	93.35	14”	153.90

Billboard signs

Single face w/wood poles (SFSA)	$ 27.80
Art, display, & pictorial (SFSA)	4.25
Steel poles (SFSA)	7.70
Wood platform (LF)	27.25
Steel platform (LF)	53.25
Additional back-to-back sign panel	Add 50%
Illumination (base cost per site)	910.00
Add for	
Incandescent	260.00
Quartz	430.00
Mercury vapor	1,125.00
Sodium	1,525.00

Parking lot accessories

Type of accessory	Each
Barrier gate:programmable	$ 4,475.00
Card reader	2,520.00
Cashier booth Avg.	13,825.00
Fee computer	16,745.00
Ticket spitter w/time & date	8,350.00
Mag.stripe encoding	23,455.00
Vehicle detector	660.00
Guide rails (per LF)	
corrugated steel	23.20
timber	29.85
cable	12.30
Paint striping (per LF)	0.35

Flagpoles

Cost for typical heights, includes concrete base

	Height				
Type	20’	25’	30’	35’	50’
Aluminum	$2,505	$2,775	$2,890	$3,500	$6,230
Steel	2,130	2,360	2,460	2,975	5,295
Fiberglass	—	2,840	3,290	3,865	8,495
Wood	—	2,260	2,730	—	—

For bronze or SS poles, add 125% to steel price.

Septic tanks

(not including piping)

Type	Gallons cap.	Cost
Precast concrete	750	$ 1,075
	1,000	1,425
	1,250	1,780
	1,500	2,145
	2,000	2,770
	4,000	5,785
	6,000	8,650
	10,000	14,515
Leaching lines - tile (per LF)		$ 10.75
Plastic pipe (per LF)		6.65

Sewage pumping stations

(not including external piping)

Costs are for prefabricated steel, concrete, or fiberglass plants with 200 and 1,000 gallon per minute capacities.

200 GPM		$ 80,995
1,000 GPM		149,450
Add for generator unit		
200 GPM	concrete	32,670
	steel	50,540
1,000 GPM	concrete	45,390
	steel	54,925

Sewage treatment plants

(not including underground piping)

Type	GPD	Cost per gal.
Steel - blown air Aeration plant	1,000	$ 22.35
	5,000	14.85
	15,000	8.15
	50,000	5.80
	100,000	5.20
	200,000	3.70
	500,000	3.65
Concrete extended primary and secondary treatment	10,000	16.85
	50,000	6.75
	100,000	5.25
	500,000	3.75

CIP Schedules

Elevated tanks

Costs include tank, tower, riser pipe, ladders, balcony, *etc.*

Steel tanks

Capacity (gallons)	Tower height			
	50’	75’	100’	150’
50,000	$ 197,000	$ 217,700	$ 249,700	$ 321,900
75,000	234,800	260,000	292,100	362,000
100,000	254,300	278,400	312,700	383,800
200,000	419,300	453,600	488,000	556,700
300,000	522,400	570,500	607,100	674,700
400,000	612,900	670,100	701,100	776,700
500,000	683,900	744,600	801,900	885,500

Wood tanks

Capacity (gallons)	25’	50’	75’	100’
30,000	$ 61,200	$ 73,100	$ 90,700	$ 116,100
50,000	81,000	94,700	114,200	146,000
75,000	—	116,400	140,000	181,100

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Underground pipe (per LF)
(including trenching and back filling)

Costs include pipe and fittings installed up to the building

	4”	6”	8”	12”	16”	24”	36”	48”	60”	72”
Water, gas, & steam										
Asbestos cement	$ 30.00	$ 35.00	$ 45.00	$ 90.00	$ 125.00	$ 220.00	$ 380.00	—	—	—
Ductile iron	30.50	34.05	53.00	73.25	128.30	153.30	223.80	$ 310.80	—	—
Concrete	—	—	—	—	47.65	82.05	158.70	244.05	$ 349.25	$ 468.60
Plastic	17.05	20.00	29.45	52.70	—	—	—	—	—	—
Steel	33.85	42.20	53.90	94.95	119.85	184.40	332.40	520.90	—	—
Valves, each	765.00	1,625.00	2,795.00	5,980.00	10,205.00	22,270.00	46,980.00	81,240.00	—	—
Drain & sewer										
Asbestos cement	—	14.65	16.85	34.70	65.50	79.35	135.40	—	—	—
Corrugated metal	—	16.10	21.70	37.15	49.50	69.90	125.95	175.00	295.30	327.00
Plastic	6.50	9.25	14.15	24.85	—	—	—	—	—	—
Concrete-plain	—	16.00	20.55	29.45	38.15	—	—	—	—	—
reinforced	—	—	—	31.25	44.20	72.30	131.20	185.00	303.55	365.35
Vitrified clay	13.55	18.90	25.00	48.40	85.65	128.50	208.60	—	—	—

Yard fire hydrants — $4,565 Catch basins — $4,645 each

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Stacks (brick and concrete)

Costs include foundation. For square or rectangular stacks, use 1/3 the perimeter in place of diameter.

Base Diameter	Brick per VLF	Concrete per VLF	Base Diameter	Brick per VLF	Concrete per VLF
6’	$ 795	$ 675	16’	$ 1,760	$ 1,515
8’	1,005	835	20’	2,095	1,850
10’	1,225	1,005	24’	2,490	2,185
12’	1,450	1,210	28’	2,790	2,490
14’	1,610	1,395	32’	3,185	2,820

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Grain Elevators — Pricing Procedure

To use schedules A and B, select a per bushel price according to the nearest bushel capacity to the subject facility. Apply this price to the exact bushel capacity of the subject elevator to derive a base cost. The base cost price includes the items listed in the bottom note of each schedule. Also listed in the bottom note are items typically found with each type of elevator that must be priced separately using other manual schedules. Elevator types A and B often have "added-on" storage and handling equipment similar to that described in type D grain elevator schedules. In this case, separate prices should be added from the D schedules.

Example:

An old wood-frame country elevator with 82,000 bushel capacity. The subject property also has

Two 48,000 bushel steel storage tanks

One 250 bushel dump pit

One 80' leg with 1,000 BPH capacity

One 6 duct distributor head

300 LF of round 6" spouting

Two 2,900 BPH grain dryers

Base price		
82,000 bu. x $6.95	=	$569,900
2 — 48000 bu. steel storage tanks		
$112,500 each	=	225,000
1 — 80' leg w/1,000 BPH capacity		
$490 x 80 LF	=	39,200
1 — 6", 6 duct distributor head	=	2,535
1 — yard dump pit, 250 bu.	=	22,000
300 LF 6" round spouting		
$8.90 x 300 LF	=	2,670
2 — 2,900 BPH grain dryers		
$271,900 each	=	543,800
Total cost estimate grain handling facilities		**$1,405,105**

Add the cost of other yard and outside improvements, scale house, railroad spurs, scales, *etc.,* to determine the total RCN estimate.

Type D facilities are custom-assembled according to the owner's judgment for the particular location. They usually consist of a battery of steel grain tanks with related grain handling equipment and subsidiary buildings. However, the storage facilities may be concrete tanks or a combination of steel and concrete grain storage tanks.

To calculate the total cost estimate, price each storage tank, each piece of grain handling equipment, and each yard and outside item of construction separately.

Example:

6 — 38,000 bu. steel tanks, approximately 56' height		
$92,600 each	=	$555,600
6 — 48,000 bu. steel tanks approximately 72' height		
$112.500 each	=	675,000
12 — 58,000 bu. steel tanks approximately 88' height		
$130,400 each	=	1,564,800
1 — 76,000 bu. steel building flat grain storage		
76,000 bu. x $1.70	=	129,200
3 — dump pits, 900 bu.		
$36,200 each	=	108,600
2 — 60' legs/1,500 BPH		
$580 x 60 LF	=	69,600
1 — 80' leg/2,000 BPH		
$555 x 80 LF	=	44,400
2 — 6" 12 duct distributor head		
$4,245 each	=	8,490
2 — 6" 6 duct distributor head		
$2,535 each	=	5,070
1,800 LF of 6" round spouting		
$8.90 x 1,800 LF	=	16,020
2 — 2,900 BPH grain dryers		
$271,900 each	=	543,800
1 — 120' x 12" elevated belt conveyer		
$22,000 each	=	22,000
Total cost of grain storage and handling facilities		**$3,742,580**

Grain Elevator Schedules

Type A — wood framed

BU capacity	Elevator cost per BU
20,000	$ 11.65
25,000	10.70
30,000	9.95
40,000	8.90
50,000	8.15
75,000	6.95
100,000	6.20
150,000	5.30
200,000	4.70
250,000	4.35
300,000	4.05

Note: Costs do not include any separate office building, scale house, drying equipment, dump pits, railroad scales or spurs or yard improvements. These items must be described and priced separately from the appropriate schedules. See Type B or grain tank steel schedules for annex.

Grain conversion tables

1 Bushel corn =	1.2445 CF	or 56 lbs.
1 Bushel wheat =	”	or 60 lbs.
1 Bushel soybeans =	”	or 60 lbs.
1 Bushel oats =	”	or 32 lbs.
1 Bushel barley =	”	or 45 lbs.

1 Cubic foot (CF) = .8036 bushel

1 Gallon = .1337 CF or .1074 bushel

To compute the volume of a circular bin with a flat top:

1 Multiply the square of the diameter of the bin floor x .63135 to get the bushel storage per foot of bin.

2 Multiply the bushel storage per foot by the eave height of the bin. (D^2 x .63135 x H)

Example:

Bin is 21’ dia. x 40’ high =
21’ x 21’ x .63135 = 278.43 (base area)
278.43 x 40’ = 11,137 bushels.

To compute the volume of same bin with an estimated 6’ high cone top, multiply the area of the base by 1/3 the altitude, then add this additional volume to the already calculated volume of the flat top bin or

278.43 x 2’ = 557 additional bushels

Type B — concrete country

BU capacity	Elevator cost per BU	Annex cost per BU*
75,000	$ 9.50	$ 6.15
100,000	8.85	5.75
150,000	8.00	5.20
200,000	7.45	4.80
250,000	7.05	4.55
300,000	6.75	4.35
400,000	6.25	4.05
500,000	5.95	3.85
750,000	5.35	3.45
1,000,000	5.00	3.20
2,000,000	4.20	2.70
2,000,000+	3.80	2.45

*Costs are for an annex with a basement.

For an annex with a tunnel only, deduct 9%.

Note: Costs do not include any separate office building, scale house, supplemental storage buildings, drying equipment, railroad spurs, truck or railroad scales or yard improvements. These items must be described and priced separately from the appropriate schedule.

Supplemental equipment

Truck lifts, hydraulic, 70’ - 36^0 tilt
in concrete cell (w/o scale) $140,300

Dump pits (in yard) 250 bu. 22,000
(17’ deep x 14’ W x 12’ L) 900 bu. 36,200

Manlifts — per lin. ft. travel
electric operated — LF 275
manual operated — LF 107

Aeration tubes, 12” dia., per LF 18.75

Grain truck probe 13,700

Grain Elevator (Type D) Schedules

Feed mill equipment

Because of the vast variety of types and sizes of feed mills, some of which are combined with a country-type elevator, it is recommended that the building be priced from the appropriate CIP schedules.

Equipment — the cost of the machinery is very flexible and the costs in the table represent a range based on the cubic feet of building volume which can be used as a guideline.

Normal machinery and equipment consists of a dump pit and screw conveyor, temporary storage bins, molasses tank and mixer, hammer-mill, roller mill, and an elevator or conveyor system.

Building Volume	Per CF of building
20,000 CF	$3.30
30,000	3.05
40,000	2.85
50,000	2.55
75,000	2.35
100,000	2.25
125,000	2.05
150,000 and more	1.95

Grain dryers

Continuous flow grain dryers

Farm		Commercial	
Bu per hr.	Base cost	Bu per hr.	Base cost
790	$ 75,100	1400-1999	$ 235,700
1115	104,200	2000-2925	271,900
1350	124,400	3500	308,500
1650	176,400	over 3500	83.30

Add

Safety fire alarm	$ 6,646
Heat recovery	19,937
Base section control	5,921

Centrifugal bin fans

Type	Cost
Fans without motor	$ 1,810
Fans with 5 hp. single phase	3,060
Fans with 7.5 hp. single phase	3,585
Fans with 10 hp. single phase	4,115
Fans with 5 hp. 3 phase	2,425
Fans with 7.5 hp. 3 phase	2,525
Fans with 10 hp. 3 phase	3,185

Conveyors — elevated*

Length	8”	12”	16”	24”
15’	$ 3,900	$ 4,600	$ 5,850	$ 5,900
30’	5,700	7,500	9,100	11,400
45’	7,850	10,600	12,300	16,000
60’	9,650	13,050	15,150	18,800
75’	11,750	15,500	17,350	23,600
90’	13,450	18,000	19,550	28,300
120’	16,900	22,000	24,400	37,750
150’	20,500	28,400	29,100	45,900
200’	25,550	33,500	41,100	58,100

*For tunnel conveyors, deduct 25%.

Belt capacities

8” = 5,500 BPH	16” = 12,000 BPH
12” = 8,000 BPH	24” = 17,000 BPH

Distributors (each) manual 45^0

No. of ducts	6” - 8” dia.	9” - 12” dia.
3	$2,430	$ 2,450
6	2,535	3,455
12	4,245	5,920
18	6,435	8,475

Spouting (per LF)

Size	Flexible	Round	Square
6”	$ 6.80	$ 8.90	$ 15.90
8”	6.95	11.25	21.05
10”	10.60	14.40	26.35
12”	14.25	21.95	31.65
14”	17.40	29.10	35.70

Spouting (per LF) costs include installation on legs or saddle pads (including fittings on tank) but not pipe, valves, or foundations.

LP tanks — horizontal

Capacity	Size	Cost
5,000	5’ x 36’	$22,500
7,500	6’ x 37’	28,600
10,000	6’ x 50’	37,400
12,500	6’ x 61’	41,700
15,000	7½’ x 50’	45,400
20,000	7½’ x 65’	53,800
25,000	9½’ x 51’	55,300

Elevator legs (bucket conveyors)

Cap. bu.	Discharge height (per VLF) (Multiply cost per foot times height to determine cost of equipment.)						
Per hr.	30’	40’	50’	60’	80’	100’	120’
500	$ 910	$ 690	$ 570	$ 500	—	—	—
750	925	715	595	530	—	—	—
1,000	950	725	605	550	$ 490	$ 450	$ 425
1,500	995	770	630	580	530	475	440
2,000	1,050	800	670	595	555	500	470
3,000	1,155	885	760	660	595	555	500
5,000	1,290	1,080	910	790	705	630	590
7,500	—	1,340	1,120	975	845	755	680
10,000	—	—	1,320	1,155	980	860	790

Grain Elevator Schedules

Grain tanks — steel

Costs are for bolted steel tanks, including concrete foundation only.

Dia.	Eave height	Bu. cap.	Cost
9’	24’	1,297	$ 7,200
	32’	1,729	9,200
	40’	2,162	10,700
	56’	3,035	13,800
	72’	3,892	16,600
12’	24’	2,309	11,200
	32’	3,078	13,300
	40’	3,818	18,100
	56’	5,385	21,800
	72’	6,929	25,400
15’	24’	3,605	15,000
	32’	4,807	18,800
	48’	7,210	25,800
	64’	9,614	32,500
	80’	12,030	38,900
18’	24’	5,189	19,500
	40’	8,649	29,200
	56’	12,109	38,200
	72’	15,586	46,700
	88’	19,064	55,000
21’	32’	9,425	32,000
	40’	11,791	38,000
	56’	16,504	49,000
	72’	21,241	58,800
	88’	25,976	69,200
26’	32’	13,893	44,500
	48’	20,858	58,800
	64’	27,624	73,100
	72’	34,824	81,000
	88’	41,807	95,400
32’	32’	21,204	60,400
	40’	26,532	71,900
	56’	37,189	92,600
	72’	47,846	112,500
	88’	58,503	130,400

For corrugated galvanized tanks, see rural section.

Steel building flat grain storage

Costs include concrete foundation and floor, steel panel walls, gable steel roof with rigid steel frame, doors, and explosion-proof lighting.

The SFGA costs do not include heat, loading or leveling systems, aeration devices, or any other features, and are only for those buildings specially designed and built for the storage of grain.

For other types of construction, price from the appropriate schedules.

Bushel capacity	Cost per bushel	Bushel capacity	Cost per bushel
50,000	$ 1.80	300,000	$ 1.40
75,000	1.70	400,000	1.35
100,000	1.65	500,000	1.30
150,000	1.55	750,000	1.25
200,000	1.45	1,000,000	1.20
250,000	1.45	2,000,000+	1.10

Quonset buildings

Costs include standard building with concrete footings and doors at each end.

Costs do not include floors, heating, lighting, or plumbing. Heating and plumbing should be added from CIP schedules.

Length	30’ Wide	40’ Wide	60’ Wide	70’ Wide
30’	$ 19.80	—	—	—
36’	18.90	—	—	—
48’	17.60	$ 16.15	—	—
60’	16.70	15.20	$ 14.45	—
72’	15.95	14.55	13.85	$ 13.35
84’	15.40	14.05	13.30	12.90
96’	14.85	13.55	12.90	12.40
108’	14.40	13.15	12.50	12.05
120’	14.05	12.85	12.10	11.70
160’	13.10	11.95	11.25	10.95
200’	—	11.25	10.65	10.40

Additions	Cost
Floors —	
asphalt	$ 0.50
concrete	2.60
crushed stone	1.05
Lighting	1.70

Auger and drive

This is used for the unloading of grain bins directly into hoppers.

Tank diameter	Base price
15’	$ 915
18’	1,025
21’	1,140
26’	1,330
30’	1,480
34’	1,630
40’	1,855

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